THE RAILWAY GAZETTE
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DIESEL RAILWAY TRACTION SUPPLEMENT

The April issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1*s.*

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 *a.m. till* 5.30 *p.m.*
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Canadian Railways and Air Transport

MR. C. D. HOWE, the Canadian Minister of Munitions & Supply, said in the House of Commons at Ottawa recently that it had been decided that Canadian railways shall not exercise any monopoly of air services, and that steps will be taken to require the railways to divest themselves of ownership in air lines. A public statement with reference to this, made by Mr. D. C. Coleman, Chairman & President of the Canadian Pacific Railway, pointed out that this involved a radical departure from policies hitherto followed in Canada, where the situation was not parallel with that existing in any other country. In Canada, both the large railways conduct transport systems in the full sense of operating railways, steamships, telegraphs, air lines, express services, buses, and motor lorries. The C.P.R. was authorised by its original Act of incorporation to operate steamship services, and in 1919 by a special Act to operate air services. It may be recalled that the first C.P.R. air undertaking was the equal acquisition with the Canadian National Railways of stock in Canadian Airways, controlled by the late James Richardson. More recently, the C.N.R. developed Trans-Canada Air Lines, and the C.P.R. with the encouragement and approval of the government undertook to acquire control of a number of competing air lines in Northern Canada and consolidate their operations. The C.P.R. in good faith invested a large sum of money which cannot be expected to yield a return for some time to come. Presumably legislation will be introduced to implement the new Canadian policy, and Mr. Coleman's statement said that in the consideration of that legislation any experience or information which the Canadian Pacific Air Lines had acquired would be made available if required.

Rail Revival on the Londonderry & Lough Swilly

A year ago the Londonderry & Lough Swilly Railway Company caused a pleasant surprise by the payment for 1942 of a dividend of 1 per cent. on its ordinary shares which had received nothing since the 3½ per cent. distributed for 1922. The payment of 1 per cent. is repeated for 1943 and has been earned with the aid of an increase of £9,247 in gross receipts, of which increase £7,122 came from railway operations. Beginning with a railway of 9½ miles from Londonderry to Farland Point, Carrowen, in County Donegal, which was opened on December 31, 1863, the system was gradually enlarged. Extensions of 5 miles to Buncrana in 1864, of 16½ miles to Letterkenny in 1883, of 18½ miles to Carndonagh in 1901, and of 50 miles from Letterkenny to Burtonport in 1903 brought the total mileage operated by the company to 99½ miles. Before the last war the company was paying a steady 7 per cent., but after 1919 high operating costs and the popularity of competing road services forced it in 1930 to run its own road services, which have been its chief source of revenue. Closing of sections of line to rail traffic has followed and only 52¼ miles of railway are now operated. Although road transport services in 1943 brought in a gross revenue of £106,358, gross receipts from the railway advanced to as much as £51,822. A noticeable feature of the railway revenue is the £3,025 derived from first class travel. Passenger train receipts as a whole contributed £25,579 and goods train receipts £25,515.

Public Relations Carriage on the Sudan Railways

The increasing interest throughout the world which railway administrations have taken in recent years in what has come to be called public relations, has resulted in a variety of activities designed to gain and retain the goodwill of present and potential customers. In countries like Great Britain this takes the form mainly, although by no means entirely, of press relations and correspondence, but in other parts of the world different methods have to be used to meet local needs. In the Anglo-Egyptian Sudan, for example, the Sudan Railways several years ago equipped a railway carriage with a magic lantern, a silent film projector, and a small portable generator. This carriage toured the system, giving performances at wayside stations, especially for employees of the railway. Since the outbreak of war, this vehicle has been equipped with a sound projector, and has been used even more widely in the capacity of a "Public Enlightenment" carriage. The latest war films, with Arabic commentaries, Government information shorts, and educational films are shown. Regular itineraries are announced, and from 400 to 600 persons frequently gather at stations to see the shows. So that those living considerable distances from the railway may also benefit, the railway administration sometimes transports the projection equipment by motor lorry to isolated villages and presents special performances. This public relations activity is playing no small part in making known the services and aspirations of the railway, and of the country which it serves.

South African Railways & Harbours in 1943

The General Manager of the South African Railways & Harbours, who has issued some operating figures for the calendar year 1943 (the financial year 1943-44 ended on March 31 last), states that every record was broken by the Administration. Every serviceable vehicle had to be worked to the limit of its capacity, and locomotives due for scrapping had to be rebuilt or repaired; the fact that the railways could meet all goods, and nearly all passenger, traffic demands was due largely to the ingenuity, skill, and loyalty of the workshops staffs, on which a tremendous strain was imposed. After the outbreak of war, states the General Manager, an unprecedented demand for long-distance travel facilities occurred; and this culminated, in 1943, in an increase of more than 10,000,000 passengers of that category compared with 1939, despite appeals to the public to restrict its travel to necessary journeys, and despite the withdrawal of many through passenger trains (including all "express" and "*de luxe*" services). The number of suburban passengers conveyed during 1943 was 56,500,000 more than the figure for 1939.

Increased Goods Traffic

During the calendar year 1943 some 42,500,000 tons of goods was transported over the South African railway system, compared with 35,500,000 tons in 1939. The increase in ton-mileage over the period was from 8,530,000,000 to 10,800,000,000. Tonnage of coal conveyed in 1943 was about 16,750,000, against 13,750,000 for 1939; the General Manager states that this class of traffic during 1944 is likely to exceed even the present record volume. Livestock traffic has shown an increase since the beginning of the war of some 2,500,000 animals conveyed. More than 5,000 long-distance special trains were run during 1943 for the conveyance of troops; in addition, hundreds of extra short-distance trains were run on regular schedules to meet the needs of military camps. The ports of the Union dealt with a heavy traffic; harbour facilities have been extended, and various programmes, including those for new graving docks at Cape Town and East London, are being carried out. The General Manager states that a small number of steam locomotives and some electric units may be delivered in the Union this year by Great Britain, and Canada is expected to fulfil part of a large order for wagons.

New Rolling Stock for the Southern Railway

A form of construction which may indicate lines of post-war development has been adopted for the 4-wheel passenger luggage van, recently built by the Southern Railway, of which some details and illustrations are given on page 363; the vehicle is in service, and nine more are under construction. One of the main features of the van is the use of panels made of reinforced plastic material, of patented design, instead of wood or steel. This has contributed largely to the saving of one-fifth which has been effected in comparison with the weight of 13 tons of the company's existing standard type of 4-wheel van, a type used extensively by the Southern Railway, which in that respect is well suited to be the prototype of a design incorporating any radical change in form or construction. The other principal feature of the new vehicle is the separation of the body from the main frame and the introduction of spring-cushioning to enable the former to move some inches longitudinally and return to its normal position. Apart from reducing the likelihood of damage to goods through shock, the spring-cushioning device represents a wise precaution in view of the hitherto little-known behaviour of plastics when used in railway rolling-stock construction.

Quaint Irish Railway Survival

The application of the Omagh Regional Education Committee to the Northern Ireland Transport Appeal Tribunal for better facilities for Fintona children attending Omagh schools, has directed attention once again to the quaint horse-drawn conveyance which still maintains passenger service on the branch of the Great Northern Railway (Ireland) between Fintona and Fintona Junction. Fintona, which in 1937 had a population of 1,002, was linked by rail with Omagh in June, 1853, but in the next year the line was extended from Fintona Junction to Enniskillen, placing Fintona itself at the end of a ¾-mile branch, passenger service on which is maintained by a vehicle known locally as the "van," which strongly resembles an open double-deck tramcar. First and second class passengers are accommodated in two covered compartments (first class with upholstered, second class with wood, seats), while third class passengers are allotted a knife-board seat on the roof. This vehicle is shown in the timetables as an ordinary train connecting with the steam trains at Fintona Junction; it makes five double trips on weekdays. This was replaced for a short time by a rail motor vehicle, but the horse was soon reinstated and appears to have met local needs admirably until now. There is a daily goods train to Omagh, handled by steam locomotive. No tablet or staff is issued, and this 5 ft. 3 in. gauge branch is worked on the "one engine (or horse) in steam" principle.

Rolling Rails in South America

Some further details have now come to hand concerning the rail rolling mill at Monlevade, in the State of Minas Geraes, Brazil, which produced last November the first steel rail ever rolled in South America. This plant, which is operated by the Companhia Siderúrgica Belgo-Mineira, is furnished entirely with U.S.A. equipment, as we recorded in our February 4 issue, page 126. It now appears that the project was encouraged by President Vargas, and by his Minister of Transport & Public Works, primarily as a means of obtaining rails for the connecting link between the railways in the southern and north-eastern sections of the country (Montes Claros to Ourives), to which we have already made more than one reference in our columns, notably on January 7 last, page 15. It is reported that the production figures for this mill have already reached 2,500 tons a month, at which rate the total output of the plant for a year or more will be required to supply the rails needed for this important north-south railway connection. It is hoped, however, to increase the ultimate capacity to 50,000 tons a year. Rails in excess of 65 lb. will not be rolled by this plant, and it is suggested that, when operations begin at the National Steel Plant at Volta Redonda, the production of rails at Monlevade will be discontinued.

Low-Water Alarms

A mysterious feature of the Honeybourne accident was the failure of the fusible plugs to melt and allow the fire to be put out. Such failures are indeed rare, but the fact that they can occur is disturbing. There are, however, certain devices, operating on quite simple principles, which can be fitted to locomotives to give additional security. In America, where crown-sheet failures have occurred rather more often than in this country, low-water alarms have been devised to blow two whistles (a small whistle in the cab and a large whistle on top of the boiler) which give simultaneous notice, to the engine crew and running shed personnel respectively, within fifty seconds after the water in the boiler has reached a predetermined low limit. The alarm depends on a simple float-operated valve for its action which is governed solely by the height of the water, and a cleverly arranged outer casing eliminates false alarms that might be caused by the surging of water in the boiler. In view of the wide application of low-water alarms in stationary boiler practice, there would seem to be a case for considering the fitting of similar devices to locomotives.

Time Saved by Carrying Stock of Spare Parts

The idea is gaining ground on both sides of the Atlantic that much valuable time could be saved in locomotive maintenance by carrying more comprehensive stocks of spare parts at the principal running sheds. Emphasis to this point is given by the wise policy pursued by the Hunslet Engine Co. Ltd. in systematising the replacement of all the principal parts subject to wear on its 0-6-0 saddle-tank locomotives, described in our issue of February 25. It is so obvious that less cost is incurred in buying or making spare parts than in purchasing new locomotives, that little room can be left for the argument that a full stock of spare items would run the railway companies into needless expense. A certain amount of forethought would be needed in deciding what parts should be involved in any such scheme; but it is more than likely that any trouble and expense that might arise in standardising, say, journal sizes would quickly be repaid. Coupling rods, motion details, spring gear, and axleboxes suggest themselves as suitable items for a stock of spares. The efficiency of such a system could also be enhanced by keeping card-index records of such matters as the sizes of the coupling rod pins and axlebox journal diameters for every locomotive.

Select Committee's Report

In the interests of accuracy we think it desirable to place on record a further inaccuracy in the report on rail and road transport of the Select Committee on National Expenditure, which was the subject of an editorial article in our March 31 issue. This is in paragraph 6 where it states that under the terms of the original financial agreement between the Government and the railways, the latter were to receive a minimum sum of approximately £43½

millions out of the pool remaining after expenses had been deducted from the railway receipts. The facts are that the guaranteed minimum was £40 millions only but after payment of this guaranteed figure any balance in the pool up to an amount of £3½ millions was paid to the controlled undertakings in proportion to their respective guaranteed net revenues. The point is that the controlled undertakings were only entitled to a figure of £43½ millions if it was earned.

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American Signal Engineers in Wartime

The war has not been without effect on the activities of the signal section of the Association of American Railroads. Last year the Committee of Direction decided not to hold an annual meeting, but it met certain officers to consider comments received on the reports previously circulated. The Chairman, Mr. S. W. Law, of the Northern Pacific Railway, on that occasion pointed out that signal engineers were experiencing a good deal of difficulty in maintaining their equipment with the forces at their disposal. One line had lost 30 per cent. of its experienced staff and the training of substitutes was limited to a period of 6 months, although ordinarily 4 years was thought to be necessary. At the same time the importance of signalling in facilitating the enormous task facing the American railway system is recognised by the authorities and special allocations of material have been granted to accelerate the installing of modern equipment, especially centralised traffic control, which has been much extended since the war began, and with marked success. The committee work of the section has been carried on, and excellent work accomplished in revising specifications so as to cut down the use of essential materials and prolong the life of apparatus. This has involved a number of changes in practice and simplification of circuits.

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Magnaflux Testing for Steel Fireboxes

The Honeybourne accident, the Ministry of War Transport report on which was given in abridged form in our issue of February 25, although apparently in no way due to the fact that the firebox was of steel, has served to remind us that we now have numerous steel fireboxes in our midst—in addition to those introduced by Mr. O. V. Bulleid on the Southern Railway. The high temperatures and generally severe operating conditions obtaining in a modern locomotive firebox have brought into prominence the need for making full allowance for the behaviour of materials at elevated temperatures, quite apart from their properties when cold. Fabrication methods, moreover, take on an increased importance The Magnaflux method of detecting incipient cracks in ferrous metals, which has been introduced into this country by the Metropolitan-Vickers Electrical Co. Ltd., has been successfully applied in the investigation of steel firebox defects. One of the valuable properties of this method of testing is that it reveals whether a crack has developed as a result of embrittlement or whether it is trans-crystalline, such as might arise from neglect to remove sharp edges from rivet holes. The same method of testing is also applicable to the whole of the boiler shell, where in certain cases it has yielded important evidence in connection with official inquiries into boiler accidents.

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Further Outlook Unsettled

Although nobody supposes that the opening of a second front in Europe will be advertised beforehand, there is a general eagerness to seize upon signs and portents of its coming. The known facts and statements having been discussed until they are threadbare, other scraps of information are often magnified by the press to satisfy a curious public. A recent announcement that cuts in train services may have to be made without notice was given much prominence in a Sunday paper under the heading that such withdrawals are now "secret" and readers were treated to a picture of "high officials" of a railway unable to explain why trains are late or absent because "they do not know." Another heading on the same page announced that "pilotwomen will be rail directors," and gave a lurid picture of feminine domination on the footplate by "the girls whose orders no engine driver dare question." Reading of these bemused "high officials" shrugging their shoulders in reply to questions, and of these dictatorial females, the intending traveller must gain a grimmer impression of conditions in this country during the next few months than he did a few years ago when, under the threat of invasion ourselves, we went placidly on our way happy in the conviction that all we needed to do in a crisis was to "stay put," and that our troubles would soon be ended by a genial soldiery and a paternal Home Guard.

Railway Rates Tribunal

THE Railway Rates Tribunal has just published its annual report covering its work during the year 1943. The report refers to the retirement of one of the three permanent members of the Tribunal, Mr. John Quirey, C.B.E., on June 30, 1943, and his replacement by Mr. T. E. Argile. It records that, apart from additional duties imposed upon the Tribunal under Section 2 of the Railway Freight Rebates Act, 1943, its jurisdiction during the year has remained unaltered. Its report, which is accordingly divided into five parts, deals first with applications made to it under the Railways Act, 1921. At the beginning of the year five applications were pending and during the year 15 more were filed. Of this total of 20 applications, 12 were dealt with during the year and five were withdrawn. Eight of the applications concerned exceptional rates; five the standard terms and conditions of carriage, and four the classification of merchandise; the remaining two were for the continuance of special charges and the question of the reasonableness of charges for the detention of wagons.

No applications were made to the Tribunal during the year under the Railway (Road Transport) Acts, 1928. So far as the various Railway Freight Rebates Acts, 1929-1943, are concerned, the Tribunal held a public sitting for the purpose of certifying to the Minister of War Transport as to the year commencing October 1, 1942, the amount which would have been available for coal rebates and the amount of the coal rebates payable under the scheme in respect of traffics delivered for conveyance by railway before the suspension of coal rebates on July 1, 1943. On November 23, it reviewed the operation of the scheme for the period in question, and on December 2 gave a judgment estimating for the year ending September 30, 1944, the railway companies' rate relief at £2,395,000; the net revenue of the fund at £1,450,546 and fixing the rebate to be allowed from carriage charges in respect of agricultural traffic at 14⅜ths of such charges. It also appended a statement to its judgment estimating that the amount for the year commencing October 1, 1943, of the revenue of the fund which would have been available for coal rebates was £1,184,853.

Under the provisions of the Road & Rail Traffic Act, 1933, 1,785 applications for the approval of agreed charges were filed compared with 604 for 1942; 1,785 Orders were made by the Tribunal during the year, of which 1,662 related to merchandise train traffic, 121 to passenger train traffic, and two to both classes of traffic. The 1,785 Orders covered the whole of the specified portion of the traffic of 556 traders, and of these Orders 1,246 related to new agreed charges; the remainder were renewals or substitutions, with or without modifications, of charges previously approved. The majority of the new charges were for the carriage of returned empties following on the provisions of the Minister of War Transport's Carriage Paid Direction of December 17, 1942, and to enable the railway companies and traders to effect reductions in clerical work necessitated by shortage of staff. No applications were made to the Tribunal under the provisions of the London Passenger Transport Act, 1933.

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The Railways of Victoria

RECENTLY-ISSUED annual reports of the various State railway administrations in Australia have been noteworthy for their record of financial achievements in war conditions, and the report of the Victorian Railway Commissioners for the year ended June 30, 1943, is no exception. The financial result of the year's operations, namely, a surplus of £787,702, was an improvement of £138,354 on the record surplus of the previous year. Revenue increased by £2,505,387, and working expenses by £2,435,625, but there was also a decrease in interest charges, etc., which added to the improvement in the surplus. The gross revenue of £17,120,223 was by far the highest ever earned; of the increase of £2,505,387 over the previous year, goods contributed £1,567,465, and passengers £767,108. Despite enormous increases in costs, railway charges have not been raised above pre-war levels, and the additional revenue was therefore due solely to increased business; of course, war conditions were responsible for the record traffics. These included heavy defence movements, great expansion of industry, diversion to the rail of a large volume of passenger and goods business by reason of severe rationing under National Security Regulations of petrol for private and commercial use, and restricted interstate shipping facilities. Working expenses totalled £14,118,941, an

increase of £2,435,625, of which higher salaries and wages accounted for £500,000, caused principally by cost of living adjustments, and awards of industrial tribunals. The higher price of coal, including the cost of conveyance overland from New South Wales mines, involved £249,000. There are also items of £400,000 for deferred ordinary maintenance reserve, and £285,000 for accrued staff leave reserve. The greater measure of efficiency in goods operations throughout the year is shown by the fact that, despite a large number of special trains for military purposes being run with comparatively limited loads, the increase of 18·2 per cent. in the gross goods ton mileage was handled with an increase of only 13·6 per cent. in train mileage. Comparative financial results for the past two years are as follow:—

	Year 1941-42	Year 1942-43	Inc. (+) or Dec. (−)
	£	£	£
Gross Revenue—			
Railway	14,519,838	17,029,660	+2,509,822
Electric tramways	74,941	84,096	+9,155
Public road motor services	20,057	6,467	−13,590
Total	14,614,836	17,120,223	+2,505,387
Working expenses—			
Railways	11,651,128	14,071,318	+2,420,190
Less charged to special funds:			
Commonwealth Defence Works (Unemployment Relief) Account	134	—	−134
Trust Fund Railway Works (Defence Purposes)	3,658	2,452	−1,206
Loan Funds—Deferred Renewals, Replacements, etc.	201	—	−201
Federal Aid Roads & Works Grant	2,120	118	−2,002
Surplus Revenue Act	20,000	20,000	—
Commonwealth—State Air Raid Precautions Account	24,615	8,711	−15,904
Act 4645—Special Appropriation, National Security Regulations	820	—	−820
	11,599,580	14,040,037	+2,440,457
Electric tramways	56,900	58,403	+1,503
Public road motor services	26,836	20,500	−6,336
Working Expenses charged to Railway Revenue	11,683,316	14,118,941	+2,435,625
Net Revenue	2,931,520	3,001,282	+69,762
Interest charges and expenses (including loan conversion expenses)	1,948,427	1,889,545	−58,882
Exchange on interest payments and redemption	209,486	197,674	−11,812
Contribution to the National Debt sinking fund	124,259	126,361	+2,102
Total interest, exchange, etc.	2,282,172	2,213,580	−68,592
Surplus	£649,348	£787,702	+£138,354

The controlling powers possessed by the Commonwealth Land Transport Board under National Security Regulations are extremely wide, but in practice the administration and operation of the railways remain unchanged, except on any matter on which an Order or Direction is given by the Board. Such Directions have included the limitations on interstate travel, and the doubling or trebling of normal demurrage charges after specified intervals in order to enforce the prompt release of wagons. The Commonwealth Government requested all the Australian railway systems to agree to grant reductions in freight rates for the carriage of goods for defence purposes, and in fares paid by the Defence Services, in consideration of the great volume of goods and passenger traffic connected with defence activities; all the Australian railway systems agreed. The new charges became effective on January 6, 1943. All the Allied Forces received the same concessions.

One of the difficulties of the Victorian Railways Administration is in connection with the carriage of explosives. It appears that Directions from an appropriate Commonwealth authority are frequently received to carry explosives under conditions conflicting with the rules which, for safety purposes, have been laid down in the railway regulations after consultation with the Explosives Department. Originally it was understood that these Directions, which in all cases are given in writing, would throw upon the Commonwealth the responsibility for any consequences of departure from the usual methods of carriage, but in September, 1942, an Order (No. 5) made by the Land Transport Board limited the conditions under which the Commonwealth would accept liability. In November, 1942, the acceptance of even this limited degree of responsibility was withdrawn under an amended Order (No. 9), which was based upon the policy of the Commonwealth Government not to indemnify any person or authority likely to suffer loss in consequence of the exercise of powers under the National Security Act or Regulations, but merely to give consideration to any claim for actual loss or damage incurred. Representations made by the Government of Victoria have failed to secure any modification of this attitude, "notwithstanding that in Great Britain an indemnity is given by the Government to the railway companies in respect of all forms of loss or damage arising from any cause whatsoever in connection with the carriage of explosives beyond regulation limits which may be sustained by the companies, the consigning Department, or any other person." The matter is of great potential importance, and at the close of the financial year further action was being considered.

Argentine Railways Solve Housing Problems

INADEQUACY of housing accommodation is not a problem which is confined to Great Britain. As long ago as October, 1939, the first Pan-American Housing Congress met in Buenos Aires and among the most important resolutions was one which recommended to the member Governments the general adoption of the principles on which the Argentine Railwaymen's Housing Scheme is based. The scheme is an integral part of the Railwaymen's State Pension Fund and commenced to function in 1924. Consequently, there is now available the accumulated practical experience of nearly 20 years. The initial step was the approval of a law by the Argentine Congress which permitted up to 40 per cent. of the Railwaymen's Pension Fund to be invested in mortgages on house property owned and occupied by contributors to the fund who had completed not less than five years' service. Apart from the properties themselves, the mortgages carry the additional guarantee of an obligatory temporary insurance policy on the life of the mortgagor, for which purpose a special life insurance department of the Pension Fund Administration was created.

Briefly, the main features of the scheme are that loans on mortgage may be granted up to a maximum of $20,000 (about £1,250) to be repaid in monthly instalments over periods of 10, 15, 20, 25, or 30 years, depending on the age of the applicant and the result of examination by the Medical Officers of the Pensions Board. Practically the only restriction is that the combined age and period of the loan may not exceed 70 years. Thus an applicant not more than 40 years of age may apply for a mortgage repayable over the maximum term of 30 years, but a worker over 40 years of age is no longer eligible for a full-term loan and, of course, the older the applicant the higher the insurance premiums payable in respect of his life policy. Though described as life insurance, the cover provided is more in the nature of "accident" insurance. The premiums are calculated according to special tables compiled in the knowledge that the cover is "temporary," the risk a diminishing one, the amount of which recedes with each monthly contribution towards the extinction of the mortgage, and nothing is payable except in the event of the death of the assured during the term of the mortgage.

When the value of the house to be built or purchased does not exceed $6,000 (about £400) a mortgage for the full amount is usually granted; up to 90 per cent. of the value is allowed when the purchase price is not more than $10,000 (about £900); and up to 80 per cent. when the value of the property is between $10,000 and $20,000 (about £1,250). Costs of administration, transfer of title deeds and legal expenses are fixed at a maximum of 5 per cent. of the total payments to be made and the rate of interest is 4 per cent. a year, which, together with the amount of the loan and life insurance premiums are deducted in equal monthly quotas from the employee's pay so as to enable the debt, interest, and all charges to be liquidated over the agreed number of years and the property delivered to the purchaser free from all liability. The sum total of the deductions may not exceed one-third of the worker's salary or wages. Not the least of the advantages derived by beneficiaries under the scheme is that the acceptance of title deeds by the Pensions Board as security for mortgages, only, of course, after closest examination by their own legal staff, almost guarantees the buyer of the property a clean title and, furthermore, the valuation of the surveyors to the board is sufficient testimony that the price is fair and reasonable. Moreover, in those cases where the applicant for a mortgage intends to employ a builder to erect a house to his own ideas there is the added safeguard that the supervision of the construction by the board's technical staff, as a pre-requisite to advances on account, protects not only the Pensions Board, as mortgagee, but also the buyer.

During the first 18 years, 16,564 mortgages were granted to a total value of $118,631,434 (about £7,400,000), which represents 87·4 per cent. of the valuation of the properties purchased or built. The average mortgage was $7,695 (about £480). During the same period, the life insurance department met claims through death amounting to $5,251,071 (about £330,000). The actual number of claims was 893 and the average amount $5,880 (about £370). For the year 1940, the life insurance department operated at a profit of $460,778 (about £28,800).

One of the principal aims of the introduction of the Railwaymen's Housing Scheme was the provision of much-needed living accommodation. Consequently, it has been the policy of the Pensions Board to encourage the building of houses rather than the purchase of properties already completed. Of the mortgages still outstanding, 8,048 were granted to enable the applicants to build and 4,215 were conceded to allow completed properties to be bought. The scheme has carried benefits to railwaymen throughout the length and breadth of the land. Argentina is divided into 14 Provinces and 10 National Territories and mortgages have been granted on houses in 293 different towns and villages located in 12 of the Provinces and 5 National Territories, as well as in the Federal Capital. During the first 5 months of 1942, there were 202 mortgages granted—140 to build new houses, 51 to purchase existing properties, and 11 for enlargements.

It is hardly surprising that the delegates to the first Pan-American Housing Congress were impressed with the scheme as a piece of social legislation and the important part played by life insurance was quickly appreciated. A young Argentine railway worker who avails himself of the benefits offered to him is not only assured of an adequate pension on reaching the age of 55, but also a home of his own on or before retirement, free of all financial burdens, and, assuming him to be a married man with a young family, he has the satisfaction of knowing that on payment of the first monthly instalment on his newly acquired home he ensures that his wife and family will be provided for in the shape of a pension and a home free from all financial encumbrances, in the event of his premature death.

Apart from the benefits accruing to the railway worker, there is the important advantage that the Pensions Board is provided with an uninterrupted outlet for the accumulating funds, which offers all the desiderata of a first-class investment, namely, unquestionable security, 4 per cent. interest on the money, the immediate repayment of the capital in the event of the death of the borrower, and freedom from the risk of depreciation in the value of the investment, in as much as repayment of the capital sum commences almost immediately after the advance has been made. Finally, all transactions of the Railwaymen's Pension Fund, which is a State institution, are guaranteed by the Argentine Government and all profits are retained for the well-being of the beneficiaries.

Welding Progress

ONE of the outstanding features of wartime development in manufacturing circles has been the widespread adoption of electric arc welding. Even before the war considerable use of this new method of construction was being made, but for many years engineers, and perhaps particularly railway engineers, tended to reserve judgment about it because of a natural fear that in a method so dependent upon conscientious workmanship there might arise cases in which failure would occur. In other words, there were doubts about the reliability of welded joints, and therefore about the suitability of fabricated equipment for the onerous conditions of modern industry and for transport. Perhaps the greatest step forward in this connection occurred when it became possible to produce welded pressure vessels and even boiler drums that would pass the most stringent requirements of the insurance interests. Automatic-fusion welding, proved by subsequent X-ray examination, has been shown to meet every requirement, both in respect of strength and of avoiding damage to the parent metal; the experience gained in this field has done much to remove any lingering doubts as to the reliability of arc welding. Spot and seam welding of comparatively thin plates, again with automatic controls, has also developed rapidly. Automatic methods, however, are not suitable for every application of welding, and the wider acceptance of arc welding has been due to extensive experience in all kinds of work over a considerable period. In wartime particularly, arc welding has been applied to every conceivable kind of construction. Design problems have been thoroughly investigated, and procedure methods refined and elaborated until it is now accepted by the Supply Departments almost without question. Great ingenuity has been displayed in devising holding equipment or jigs, and manipulators to enable the work to be made conveniently accessible to the welder have greatly expedited production.

Similar progress can be claimed for gas welding, particularly in respect of the cutting of metal to any required contour, for bevelling, and many manufacturing processes; Thermit welding has also secured an acknowledged place in the engineer's armoury of methods. Arc welding, however, seems to be the most versatile method for usual constructional work. In the United States it prospers exceedingly, and some of the most unpromising materials and components have been successfully built into completed machines by its aid. The two "Award Programmes" sponsored by the James F. Lincoln Arc Welding Foundation have undoubtedly stimulated the study of arc welding, and have attracted widespread attention to its many advantages. From the competition papers for which awards were given by the Foundation in the second "Award Programme," it was estimated that, due to the applications discussed therein alone, a possible annual saving of around £360 milion could be achieved, including 7 million tons of steel and 153 million man-hours of labour. Such figures are rather staggering in their economic implications, and if they can indeed be substantiated they must provide an appreciable contribution to a general raising of the standard of living throughout the world.

About a quarter of the contributions which received awards in the competition we have mentioned have now been published in book form,* and a study of this mass of data can be warmly recommended to our readers. The contributions of specifically railway interest constitute Section 3 in the book, and comprise nine separate papers dealing with welded construction not only of railway components, but also of complete locomotives and wagons. In many cases comparisons are attempted between the welded design and corresponding constructions of conventional types, and the advantages claimed are by no means small. For instance, in the work involved in changing a tender into a water wagon the total construction cost, including labour and material, when using arc welding, was shown to be some 30 per cent. below that involved in the usual riveted job, and in other cases savings of even larger proportions are cited. These comparisons are of first cost only, and took no account of the lighter weights to be hauled, the subsequent saving of fuel, the possibility of longer trains, and so on, involved in the subsequent use of the welded equipment. If, therefore, reliability can be assured, the practicability of a widespread extension of welding in railway practice would seem to be very well worth close investigation. Other contributions to the volume in question deal with general engineering work, ship construction and structural works, such as bridges, and the application of welding is claimed to be advantageous for the production of wrought-iron furniture, and many other details of interest to railway engineers. Machine shop practice is also touched upon, as well as production work on road vehicles, and even aircraft. Most of the papers are naturally of American origin, but we may note one specifically British contribution, in which the Assistant Works Manager of a Chesterfield firm compares the methods used in the construction of two pairs of water turbines, each unit of 30,000 h.p.; the first pair was built in 1936 by conventional methods, and the second, built in 1942, shows a saving in cost of 16 per cent., and in weight of 20 per cent., as well as a marked reduction in the time of manufacture.

Railway Pensions and Wages

AS will have been seen from the Parliamentary Notes on page 265 of our March 10 issue, when the House of Commons discussed the Pensions (Increase) Bill on March 3, Mr. W. T. Burden, M.P., referred to the very substantial amounts which were accruing to the Treasury under the Railway Control Agreement and asked whether the Chancellor would agree that increases could be given to the superannuated staff of the railways comparable with those provided in the Bill for civil servants, teachers, and others. He further asked that the cost of these increases should rank as legitimate working expenses during the period of control, leaving the question of any payments after control a matter for negotiation between the appropriate authorities. In reply, the Financial Secretary to the Treasury intimated that if the railways came to the Government and made representations on the lines indicated they would receive very careful consideration.

We understand that the Railway Clerks' Association is in communication with the railway companies on the matter, but the question is much more difficult for the railway companies than for the Government, even under control conditions, because of the many considerations involved. The railway trade unions have also represented to the companies that the war advance should rank for superannuation and pension purposes, as a result of the decision of the Treasury that the Civil Service war bonus is to be included with salary for the calculation of pensions and have lodged a claim for an increase of 12s. a week in the existing war advance of 20s. 6d. a week for male adults, with appropriate amounts for females and juniors. Added to these is a request from the N.U.R. and A.S.L.E.F. for the establishment of a contributory pensions scheme for all railway wages grades—truly a formidable array of problems for the railway companies!

* "Studies in Arc Welding," see Publications Received, page 359

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Air and the Ministry of Transport

London, W.2. April 3

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read the editorial on this subject in your March 31 issue with great interest. I suggest, however, that the statement that "it is generally conceded that the active organisation and development of air services operating from this country should be carried on primarily by means of a 'chosen instrument,'" is without foundation.

Reference to debates in the House of Commons on December 17, 1942, and March 14, 1944, and the House of Lords on October 20, 1943, to take only three examples, disprove such a sweeping statement, while the "Lamplugh" Independent Committee report dated May, 1943, urged that no single "chosen instrument" should operate more than one trunk route.

Yours faithfully,

AERIAL

Chief Engineer

London & North Eastern Railway,
Kings Cross Station,
London, N.1. March 20

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—With reference to Mr. Bird's letter in your issue of March 10, I feel sure that Mr. George Dow was indicating the present meaning generally allotted to the phrase "civil" engineer as applied to railways. The term "civil" engineer was certainly used in past times to distinguish engineers in industry from "military" engineers. Therefore, according to the original meaning, it can be said that all railway engineering, which embraces constructural, mechanical and electrical work, is civil engineering.

On the other hand, if we take the more modern and precise interpretation of civil engineering as referring to constructional work, then signal and telegraph work (which is almost entirely mechanical and electrical engineering) cannot, of course, properly be included under the heading of civil engineering.

Yours faithfully,

G. B. BARTON,
M.Inst.C.E.,
Engineer (London)

"The Road Carrying Industry and the Future"

London. March 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—We have followed with close interest reactions to the publication of our booklet and would ask the courtesy of your space to clarify a few points which seem to have claimed particular attention, judging by published criticism. The signatories took their courage in their hands and embarked upon what they fully realised was a difficult task, because they were convinced that if the future of the road carrying industry was to be planned on sound lines, there must be a careful analysis of its real problems. It was equally essential to advance constructive suggestions by which solution of these problems might best be approached.

It is useless to attempt to build merely for one form of transport; in particular to shut one's eyes to those features of the road transport situation which have in the past exposed the industry to such a volume of restrictive legislation and to their direct relation to the railway problem. The stresses of war have emphasised both the values and the limitations of each form of transport. Surely it must be clear that both forms must be preserved and developed for their individual worth, and that for national reasons neither can be developed regardless of the effect upon the other.

The signatories would be the last to claim that the constructive suggestions they put forward are the only, or even necessarily the best solution, their attitude being "if anyone can put up a better and more practical solution, good luck to him." But such a solution is not likely to be found by those who ignore or distort fundamentals.

Britain can hold her place in the post-war world only if her production, manufacturing, distribution, and transport attain highest efficiency. To achieve this in transport means that each form must be so organised as to reach the highest technical efficiency, and must be utilised to an extent reasonably compatible with its optimum output.

It must be apparent that the majority of the unfair restrictions which have been enforced upon road transport have been the direct result of failure on the part of all concerned (and this applies equally to those engaged in road and railway transport, and to the Government) to find a satisfactory solution to the acute competition between the two forms of transport.

Those who suggest that everything will be satisfactory if we revert to the *status quo* of 1938-1939 overlook that at that time there were, hanging over the industry, all the modifications in regard to services and rates embodied in the reports of the Transport Advisory Council. These proposed modifications would, it was hoped, lead the way to a saner relationship between the two competing forms of transport, but the Transport Advisory Council was careful to emphasise that they were only temporary measures to meet an emergency and that their duration should be limited to five years.

Furthermore, the council stated that the extent to which the proposed measures might advance their ultimate aims hinged upon the spirit in which the intentions were implemented, and the outcome was certainly not a foregone conclusion. The road haulage industry, as well as the railways, had to prove not only its good intentions, but its ability to implement its side of the bargain. To return to 1939, therefore, is merely to take us back to an early stage of the problem and not to solve it.

The conclusion that some measure of consolidation is essential in that part of the road industry engaged in these competitive traffics was reached not with the advantage of any particular section or group of operators in mind, but in a very sincere endeavour to secure the healthy progress of the industry as a whole, to the general advantage of the community as a whole.

Not only are the signatories opposed, on severely practical grounds, to the formation of over-large operating units, but equally they believe that the efficient unit in long-distance goods transport must be ascertained by the test of practical working, and it will be realised that the figure of 60 tons unladen weight was a tentative one and obviously open to discussion.

Having reached that conclusion, the signatories proceeded to shape their constructive suggestions, not, as has been suggested in some quarters, with the object of putting the small operator out of business: any honest and careful examination of the proposals would effectually disprove that. On the contrary, the approach was shaped to provide for every opportunity and inducement to the long-distance operator, hitherto in a small way of business, to continue in the industry and to share in its future progress by means of amalgamation with others similarly engaged. These proposals would leave him the freest possible hand to join up with those whom his experience and personal circumstances indicated as desirable potential team-mates.

The object of the suggested time limit is to establish that the desired consolidation would be achieved by a definite date. Such a guarantee is the surest means of avoiding the risk of further outside interference in the make-up of the industry in the meantime, and the interval thus secured would be an invaluable assistance in developing and strengthening its internal organisation generally.

The suggestions aim at attacking the problem of the long-distance competitive traffic in such a manner as to avoid prejudicing those engaged in purely local transport, a type of work estimated to occupy appreciably more than one-half of the total number of vehicles owned by "A" and "B" licence holders.

The signatories, when compiling the booklet, took considerable pains to avoid any action which might conceivably have compromised any other body or person, or have offered even the slightest grounds for anyone concluding that the suggestions were anything other than what they are recorded as being, "the considered opinion of some experienced in the road transport industry and familiar with the position between it and other forms of transport."

Our desire was, and remains, the promotion of informed and constructive thinking on a difficult and important problem.

Yours, etc.,

The Signatories to
"The Road Carrying Industry and the Future,"

ARTHUR ANDREWS,
ISAAC BARRIE,
J. W. BERESFORD, M.INST.T.,
H. T. DUTFIELD, M.INST.T.,
G. T. M. FAIRCLOUGH, M.INST.T.,
L. W. GUPWELL, M.INST.T.,
J. S. NICHOLL, C.B.E., M.INST.T.,
J. F. E. PYE, J.P., A.M.INST.T.

[After the above letter was written, there was a further striking example of the "pulling both ways" to which we

referred in the editorial article on "The Road Carrying Industry," in our March 24 issue, page 305. On March 25, Mr. Roger W. Sewill, Director of Associated Road Operators Limited, and Chairman (Road Side), Road-Rail Central Conference, speaking at Norwich, opposed any policy of compulsory consolidation of operating units, and contended that road transport of goods, by its very nature, must be in the hands of small men. He said it was not, perhaps, always realised how great a proportion of the membership of the new Road Haulage Association would be composed of small-sized firms, and added that 80 per cent. of the road transport (goods) industry was composed of owners of 6 or fewer vehicles; 17 per cent. of owners of 7 vehicles; and only 3 per cent. of the whole industry of those owning more than 7 vehicles. Mr. Sewill said it must be obvious to all concerned with the industry that the complete independence of individual enterprise, by which they set so much store, would be fought for tooth and nail, and that any attempt at compulsory amalgamation and consolidation could be forced through only in the face of the bitterest opposition from an unwilling industry. —ED. *R.G.*]

Publications Received

Machine Accounting : For Small or Large Business. A General Review and Practical Guide Addressed to Executives, Accountants, Operators and Students. By O. Sutton, M.I.S., M.A., A.C.I.S. London : Macdonald & Evans, 8, John Street, Bedford Row, W.C.1. 8¾ in. × 5½ in. 269 pp. Price 25s. net.—During recent years the use of machines for accounting work has increased considerably, and it may be said that mechanical methods have come to stay in a very large number of firms, Government departments, and other organisations. Mr. Sutton contends, however, that it is surprising to find many offices continuing to rely on "pen and mental methods"; and in his publication, which he feels will fill a need for general guidance in the application of machine accounting, he has "attempted to reveal to principals, executives and employees in British industry, not only the manifold benefits derivable from the adoption of accounting-machine methods, but also an instructive variety of some of the countless ways the machines can and should be used to the great advantage of all three classes concerned." Mr. Sutton does not agree with those who refuse to adopt mechanical methods because of staff considerations, and gives a number of reasons for thinking that such methods would prove of ultimate benefit to all employees. A general review comprises Part 1 of the book and contains, among others, an interesting section on the evolution of the adding and accounting machine, and one on the education of the student. Part 2 deals with the basic principles of machine application for a business of any size, and Part 3 amplifies the principles as applied to a large concern. The text is assisted by numerous diagrams, and there is a comprehensive index.

Studies in Arc Welding.—Published by the James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, U.S.A. Obtainable from the Lincoln Electric Co. Ltd., Broadwater Road, Welwyn Garden City, Herts.—6 in. × 8⅞ in. × 1⅝ in. 1,295 pp. Illus. Price 15s. net.—This is the second major publication of the James F. Lincoln Arc Welding Foundation, and incorporates 98 Award Papers, selected from the 408 papers which received awards in the open competition held by the Foundation in 1940-1942. The previous volume, entitled "Arc Welding in Design, Manufacture and Construction," contained 109 of the outstanding papers which won awards in the 1937-1938 competition, and the two books are practically uniform with the well-known "Procedure Handbook" issued as long ago as 1933 by the Lincoln Electric Company of America. The two competitions which have been mentioned each involved awards totalling $200,000, and attracted papers from all over the world. Not unnaturally the majority were of American origin, but this volume contains several British contributions, and its international character has an advantage from the point of view of widely disseminating knowledge of arc-welding practice from wherever progress is being made in it.

Transport is fully represented ; in fact out of nine sections four are directly concerned with transport. The first deals with arc welding applied to automotive products; the second with aircraft ; the third with railway topics, and the fourth with watercraft. In other sections also, our readers will find much of interest. The section on structural work, for instance, includes papers on welded bridges and also the paper which won the First Grand Award, namely, "Welded Caissons for Naval Dry Docks."

In the railway section there are nine papers, many of which are of high interest. Among them is a description of an all-arc-welded 5,400-h.p. diesel-electric freight locomotive, details of an arc-welded fireless locomotive, and data about special-purpose wagons of all-welded design. Another paper by a Babcock & Wilcox engineer describes a proposed welded steam-turbine locomotive, the details of which have been fully worked out. This envisages a three-bogie construction, with a watertube boiler working at above 500 lb. per sq. in., and an evaporative condenser, but, unlike the other papers, this contribution represents merely a project. The other papers are eminently practical in type, describing what has already been done, and in many cases giving comparisons with alternative methods. Perhaps special mention should be made of a paper describing the fabrication of steam locomotive cylinders, which are claimed to offer advantages in several respects over conventional designs. The author goes so far as to suggest that "in the near future all cylinders on our railroad will be fabricated."

In view of the greater reliability obtained by modern methods of arc welding, and the advantages possible in the direction of lower weight and cheapness, engineers are more and more considering this method of manufacture. The volume in review shows the versatility of welding and should receive the careful study of everyone concerned with the design of both large and small components for railway use. (*An editorial article on "Welding Progress" appears on page* 357).

Erone. By Chalmers Kearney. Guildford : Biddles Limited. 7¼ in. × 4¾ in. 253 pp. Price 8s. 6d.—An out-of-work professional gentleman, incommoded by a pre-war slump and haunted by the spectre of "vested interests," finds himself in the twinkling of an eye transferred to the planet Uranus. Here is Utopia, for the Uranians have got well ahead of ourselves in social organisation. They appear to live to slow music, in a world where all one's yearnings are realised. Transport is by monorailway at over two hundred miles an hour; acceleration from scratch, three miles an hour a second. And so easy to run, as witness this conversation between the visitor and the young lady ("above average height and of exquisite form") who shows him the sights of Uranus, including a lion she rides about on :—

"Your father tells me you are an expert on railways. I should like to know about these—you have a system different from ours on earth, I believe ?"

"I don't know about being an expert—I took the ordinary course necessary to become an express driver . . . Perhaps you would like to accompany me one day when I am driving the Sirap express ?"

Uranian railways tolerate no nonsense from passengers. Hear the President speaking : "But I fear we shall have to check this demonstration . . . Crowd is getting too great. Stop all rail service to this and adjacent groups until further notice."

The post-Uranian part of the narrative we find somewhat confused, but it would seem that the hero returns to earth and, after a bitter fight with still more vested interests, and an interview at 10, Downing Street, with a scandalously unresponsive Mr. Neville Chamberlain, succeeds in getting a monorailway built. Sir Jeremiah Mactosh lays the foundation stone—apparently the first virtuous action of a mis-spent life. By way of climax, the hero goes back to Uranus *via* a German bomb. An earnest story, and in parts undoubtedly an entertaining one. E. C.

Elastomeric Engineering.—The development of rubber-bonded-to-metal applications in engineering grows apace, and new uses for metal-rubber components are continually being found. Some extremely useful data for the engineer who is seeking in this direction a solution of his particular problems is given by the T. B. Andre Rubber Co. Ltd. in its latest booklet. The principal engineering fields of application of elastic materials are set out—anti-vibration mountings, sound and shock absorbers, flexible couplings, gas and fluid seals, and protective coverings for engineering equipment subjected to abrasion or corrosion. Typical examples are illustrated, with dimensioned drawings, and some valuable information is given on the behaviour of rubber under stress, and on its adhesive qualities when bonded to metal, as shown by the torque transmitted and the deflection attained under test. A glossary of special terms used in rubber technology forms a useful conclusion.

First Aid at the Incident. By E. K. Macdonald, O.B.E., M.D., D.P.H. Published by the City of Leicester Civil Defence Committee. 7¼ in. × 4¾ in. 128 pp. Price 2s. net.—This little book is not intended in any way to replace the standard manuals on first aid ; it is essentially an adaptation of these manuals with a view to eliminating unnecessary technical terms, to restricting the information to the specific conditions encountered in air raids, and to extending the scope of treatment to cover injuries caused by poison gas, phosphorus, and so on, which civilised warfare now entails. There is an excellent chapter on organisation and control ; the treatment of shock, haemorrhage, and wounds, to which individual chapters are also devoted, is admirably concise and clear. What Dr. Macdonald has to say about the handling and transport of patients is likewise very sound, and will be particularly helpful where numerous casualties are involved.

The Scrap Heap

THE "GOOD OLD DAYS"

Auditors of the Seaboard Air Line Railway of the United States were recently studying old records of operating costs on the Raleigh & Gaston RR., one of the earliest constituents of the Seaboard, when they came across this entry:—

Gaston, N.C., Tuesday, March 31, 1840.

Engineer, captain, fireman, 2 trainhands, dinner, supper, breakfast, and lodging	$1.88
Extra engineer, supper, lodging, and breakfast	.38
Mr. Styles, 3 drinks	.19
Mr. Myers, 5 drinks, 1 ditto, 4 ditto, at 4½ c. each	.45
Two pints of brandy and bottles	.50

Things were cheap in those days, and it is as remarkable that men could be put up for the night with all meals for the equivalent of 1s. 6d. a head as that the massive thirst of "Mr. Myers" could be quenched with ten drinks for less than half-a-dollar all told!

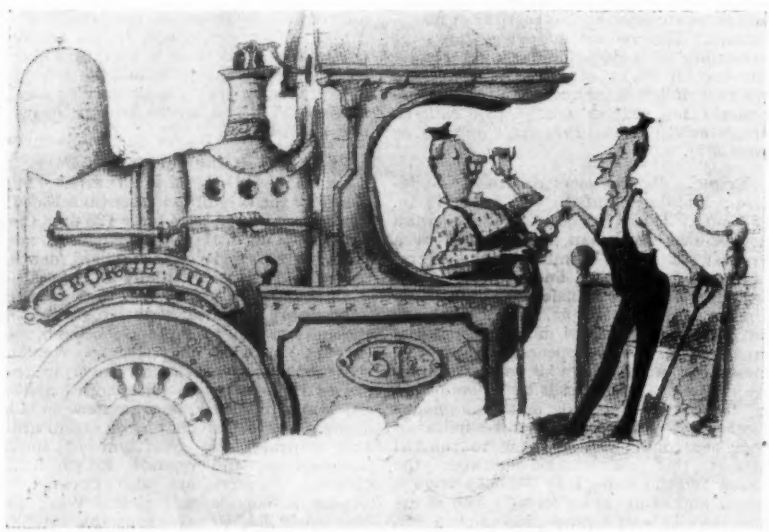
* * *

THE EASTERN COUNTIES RAILWAY

On February 26, Mr. Kenneth Brown gave a lecture at the High School, Brentwood, to the Brentwood Historical Society on the subject of the Eastern Counties Railway, with particular reference to its early days. He dealt with contemporary accounts of the opening from Mile End ("Dog Row" according to *Herapath*) to Romford on June 18, 1839. On that occasion the ceremonial trains were delayed owing to the non-arrival of the Persian Ambassador, who eventually joined at Stratford after an engine and carriage had been sent back to the terminus to fetch him. *The Railway Times* complained about the banquet given at Romford that it "was not nearly so splendid as that which recently honoured the opening of the Croydon line, or of the Southampton line last summer—especially as regards the variety and abundance of the wines." In these last-mentioned cases there was, for example, no limit to the supply of champagne, whereas on Tuesday, an order from one of the stewards was requisite to secure to any particular section of the table the presence of a solitary bottle." It also referred to Stratford Station being "erected after the style of a plain Italian villa," and said that "the third-class carriages, though not covered at the top or sides, we doubt not will, during the fine weather, obtain a fair share of the passengers." In practice, this "sunshine roof" did not prove so attractive, since a correspondent wrote to *The Railway Times* on September 4, 1839, recording that a third-class lady passenger "had her tippet set on fire, and, in extinguishing the same severely burnt her hand. Two gentlemen had holes entirely burnt through their coats, and another a severe burn on the back of his hand, which caused very general remarks of dissatisfaction."

The line to Brentwood, including the section from Shoreditch to Mile End, was opened on July 1, 1840, which, said *Herapath*, created a great sensation in the neighbourhood of Shoreditch, Bethnal Green, etc., and it is estimated that upwards of 30,000 persons were collected on the occasion. The opening of the extension from Brentwood to Colchester took place on March 29, 1843, when it was reported that at Colchester "the town had literally turned out its population to witness the consummation of the hopes and fears of alike friends and opponents."

Dealing with the general history of the Eastern Counties Railway, Mr. Kenneth Brown spoke among other things of the course adopted by "King" Hudson, who, during the time he was in control, caused the company which had only earned profits of £225,000 to distribute £545,000 by way of dividend. This he achieved by charging to capital account such items as office expenses, clothing, wages, postages, horse-keep, and coke. The company's troubles did not end with the Hudson Regime for a Committee of Inquiry appointed in 1855 called attention to various abuses, including the matter of the Norfolk & Eastern Counties Coal Company, of which the chief proprietor was Mr. John V. Gooch, who had the duty of certifying as to the quality of the coal, which he purchased as the railway company's Locomotive Superintendent from his own firm. This coal company was provided by the railway company with 200 wagons and special accommodation, and even had its freight rates lowered retrospectively so that the railway company refunded to the coal company charges it had already paid.



"... and a plaguy great dish o' tay will not come amiss at Brighton, I'll warrant me"

[Reproduced by permission of the proprietors of "Punch"

"Is Mr. Lampoien among the injured?"
"No, but no doubt he will be among those of the next train, which is due in about twenty minutes"

[From "Ferroviarios."

TRANSPORT IN THE FAMILY

Mrs. Florence Smith, and her sister, Mrs. Ethel Fowkes, were booking clerks on the District Railway during the last war. They have now returned to their old job, though at different stations, West Brompton and Mansion House respectively. They are carrying on a family tradition, for their father, Mr. George R. Arscott, was for 40 years a guard on the District Railway. Their brother, Alec, at present serving in the Royal Artillery, is a porter on the District Line.

* * *

Every week 2,000 yd. of linen are used to make destination blinds for London buses. None is wasted. Hot water removes the paper from obsolete blinds and the fabric is then used for a variety of purposes—including cleaning, black-out blinds, bus blinds, sacks, etc.—in London Transport workshops, garages, and depots. The whole process of making destination blinds and the subsequent salving of the linen is undertaken by women.

* * *

A serious railway accident was averted recently when a signalman left his box, ran along the line with a red flag, and handed it to a ganger to continue the "relay race" to the mouth of a tunnel from which a train was expected to emerge at any moment. The reason for the signalman's action was the fact that a lorry had crashed through the parapet of a high-level bridge near Bristol, and had fallen 75 ft. onto the permanent way, too late for him to stop the train from his box. The ganger's signals enabled the driver to bring his train to rest within 20 yd. of the obstruction.

* * *

TAILPIECE

(Plastics are being increasingly used for rolling-stock)

Not wood and steel alone are used today
For rolling-stock upon the iron way,
But later substances their virtues bring,
And plastics are the very latest thing.
Not vainly have their properties been tried
Alike for ash-tray and for carriage side.
Adaptable they are as well as new,
And serve for gadget and construction too.
To build a van, then fit and decorate.
They have the sturdiness without the weight,
And offer to the eye in mass and line
The varied charms of colour and design.
And so their present use may well increase
On British Railways in the days of peace.

E. C.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Cape Town Harbour Developments

A reclamation scheme, claimed to be the largest ever carried out in Africa, which is nearing completion, will provide Cape Town with 450 acres of virgin land for expansion. In under six years, and at a cost of less than £2,000,000, the scheme has involved the lifting of 17,000,000 cu. yd. of spoil from the bed of Table Bay. Among the buildings to be erected on this area is the marine railway station, to extend half-a-mile seaward of the previous shoreline. The great Duncan Basin is already in use and construction of the graving dock is far advanced.

It was originally intended to reclaim only 300 acres, that scheme to be completed by the end of 1941. The contract was for £1,125,262, and included the reclaiming of about 11,000,000 cu. yd. for the foreshore; removal of 920,000 cu. yd. of rock from the sea bed to provide an average depth of 40 ft. over the Duncan Basin; construction of a 1,030-yd. retaining wall to contain the reclaimed land on the seaward side; removal of 31,500 concrete blocks and the 3,000 yd. of loose material forming the random mole; and construction of the 4,050-ft. eastern mole from Woodstock beach.

Dredging to deepen the Duncan Basin and the approaches to the graving dock is expected to take another year. Three contracting firms have formed jointly the Graving Dock Construction Company, and have pooled their resources to build the dock.

Civil Aviation

In the *Bulletin* for January, 1944, issued by the General Manager, South African Railways & Harbours, it is stated that concrete proposals are being examined for the re-establishment, on a wartime basis, of civil air services by the Railways & Harbours Administration, and that it is generally hoped that, during this year, South African Airways will commence functioning again as an active part of the Railway Administration. The acquisition of aircraft remains the principal obstacle, but the matter is receiving the urgent attention of the authorities.

UNITED STATES

Wagon Building in 1943

Restrictions laid down by the War Production Board reduced the building of wagons in 1943 for the use of American railways to considerably less than one-half the number built in 1941. In the decline from 79,396 in 1941 to 59,571 in 1942, and to 31,591 in 1943, shortage of materials has been one factor; but another, with little doubt, has been the objection of the railways to spending their money on the composite steel and wood wagons prescribed by the W.P.B. as a substitute for the all-steel wagons generally favoured (see editorial note in our March 3 issue—ED., *R.G.*), and in future once again to be built.

The number of wagons ordered in 1941 was 106,309, but there was so heavy a carry-over into 1942 of uncompleted orders that the number ordered in the latter year was only 21,930; the 1943 orders amounted to 39,916. The totals for the three years show that building is keeping pace with the orders. Before 1941 the last year in which over 100,000 wagons had been ordered was 1929, when orders were placed for 111,321; by 1932 and 1933, in the depression, the orders had fallen to 1,968 and 1,686, respectively.

The building level of 82,240 in 1929 has never been reached since, although it was closely approached by the figures of 75,003 in 1937 and 79,396 in 1941; the lowest level of building was in 1933, when it fell to 2,160 wagons for the entire country. The 1944 programme laid down by the War Production Board calls for 50,000 new wagons, of which 30,000, to be delivered from midsummer, have been authorised to be of all-steel construction.

C.T.C. Developments in 1943

Considerable strides were made in the development of signalling in the United States during 1943, when the amount of new signalling work carried out exceeded that of any of the ten preceding years. This work included a considerable extension of centralised traffic-control, to increase the freight-carrying capacity of various main lines vital to the war effort, and of automatic block signalling; and a number of new and rebuilt interlocking plants was constructed.

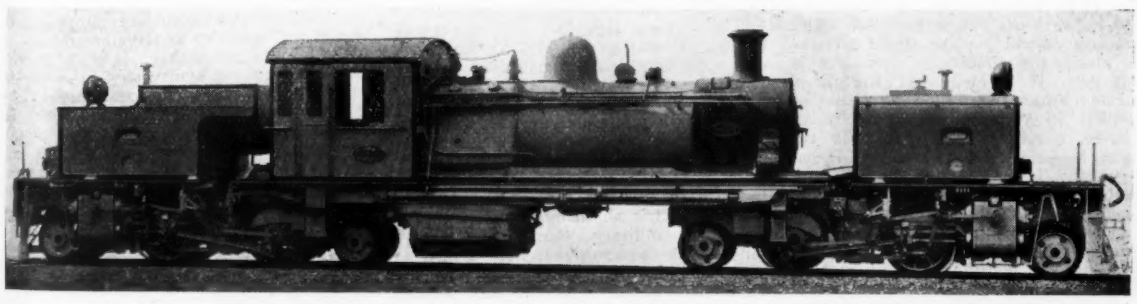
Centralised traffic-control was brought into operation over 1,177 miles of line, as compared with 807 miles in 1492. The most extensive single scheme was that over 171 miles of single track between Las Vegas, Nevada, and Yermo, California, on the Union Pacific Railroad. An even longer stretch, of 178 miles, between Montgomery and Mobile, Alabama, on the Louisville & Nashville Railroad, was completed to the extent of 117 miles in 1943; the remainder of this work is proceeding. Another important installation has been that of the Denver & Rio Grande Western Railroad, over 127 miles of single main line between Agate and Helper, Utah. When that company's 49 miles of c.t.c. between Agate and Grand Junction, Colorado, have been equipped, with the 108 miles between Grand Junction and Dotsero completed in 1942, there will be 284 miles of line from Dotsero (where the Moffat Tunnel cut-off joins the old main line from Pueblo *via* the Royal Gorge) through to Helper with continuous c.t.c. equipment. Another important installation, of which just over one-half was completed during 1943, is that of c.t.c., with continuously-controlled cab signalling, over 165 miles of the Chicago, Rock Island & Pacific Railway double main line between Blue Island, Illinois, in the outskirts of Chicago, and Rock Island. A feature of this scheme is that, to increase track capacity to a maximum, both tracks are signalled for train movements in both directions.

BRAZIL

Beyer-Garratt Locomotives

In April, 1943, the first of four metre-gauge 2-4-2 + 2-4-2 Garratt locomotives arrived at the port of Rio de Janeiro, for service on the Leopoldina Railway. The remaining three arrived at short intervals, and all were in operation by last September. These engines, which were ordered by the Leopoldina Railway at the outbreak of war, were designed and built by Beyer, Peacock & Co. Ltd. for working on the Cantagallo branch line; they were fully described in *The Railway Gazette* of December 10 last.

Traffic on the Cantagallo branch has been handled for many years mainly by some small American-built 0-4-2 tank engines, which are of insufficient power to handle the increased wartime traffics, which include important strategic materials. The severe curvature of the line prevents use of a locomotive with more than four wheels coupled; but the Garratt construction not only has enabled a double four-coupled engine to be provided with bogie wheels front and hind, but also has permitted a boiler of specially large proportions for burning Brazilian coal of low calorific value, and the necessary high ashpan capacity. As was stated in *The Railway Gazette* of December 10, the negotiation of the aforementioned sharp curves and of heavy gradients also were considered in designing the locomotives.



General view of one of the four 2-4-2 + 2-4-2 Beyer-Garratt locomotives in service on the Leopoldina Railway, Brazil

The Leopoldina Railway, which is the largest metre-gauge, and also the largest British-owned, railway in Brazil, operates some 3,086 km. (1,917½ miles) of line, much of which traverses very difficult mountainous country. The Cantagallo branch, 77 km. (47¾ miles) in length, which terminates at Portella on the Parahyba River, elevation 44 metres (144 ft.), runs to Cordeiro at an elevation of 500 metres (1,640 ft.), from which point there is connection *via* the famous Friburgo Serra (1 in 11 adhesion) to the Port of Nictheroy.

Maintenance of Diesel-Electric Shunting Locomotives on the L.M.S.R.

Summary of discussion on the paper before the Institution of Locomotive Engineers, by Mr. C. E. Fairburn, Acting Chief Mechanical Engineer & Electrical Engineer, L.M.S.R.

A NUMBER of speakers took part in the discussion which followed Mr. C. E. Fairburn's paper before the Institution of Locomotive Engineers in London on March 22. An abstract of the paper was published in our March 31 issue.

The Chairman (Sir William Stanier, F.R.S., Chief Mechanical Engineer, L.M.S.R.) said that locomotive engineers should consider seriously the manner in which the author and his team of workers had attacked the various difficulties as they arose. One difficulty was insufficient collaboration between the user of locomotives and the designer or builder. Too many administrative duties prevented locomotive engineers from getting to know the details which gave trouble and from putting forward improvements. The author had shown how well the services of a team of young workers might be utilised in that direction.

Mr. H. H. Andrews said that the most important conclusions in the paper related to the life of the engine; the author forecast thirty years, and the user wondered whether it would be ten. The large number of engines, on which the author based his opinions, made the former estimate more reliable. The author rightly emphasised the importance of the influence of first cost, which was high compared with other forms of traction; but if the probable life was known, it was much easier to estimate whether a diesel-electric locomotive was economically justifiable. Although manufacturers aimed at reducing capital cost, and thereby the annual charges in respect of it, a time would come when capital cost could be reduced only at the risk of putting up the repair charges. To guard against that danger, it was necessary to progress slowly, rather than too fast, in regard to novel types.

Mr. J. S. Tritton asked if the author would indicate the extent to which diesel locomotives could replace steam locomotives under the conditions described in the paper. It seemed that the diesel shunting locomotive showed most to advantage in very lightly worked yards and very heavily worked yards—in the former, because of low standby losses; and in the latter because of its high availability. In many yards, however, the steam locomotive appeared to be without a rival. He wished to congratulate the author on reducing lubricating oil consumption, and, comparing the figures with the latest working cost report on stationary engines issued by the Diesel Engine Users' Association, observed that the present figure (2,290 b.h.p.-hr. per gal.) compared very favourably with that for stationary engines (about 4,000 b.h.p.-hr. per gal.). He agreed with Mr. Andrews on the need for reducing capital cost; this could be achieved only if locomotives were built 50 or 100 at a time, instead of in twos and threes.

Mr. E. P. Paxman remarked that the author would find that the wear on gudgeon pin end plates would be reduced by the use of floating gudgeon pins. The low lubricating oil consumption had been secured partly by fitting an additional scraper ring. The replacement cost, £50 a year, for batteries seemed very high, indeed abnormal for an engine of the power in question. He asked for comparative weights of the batteries first used, and of those used later. He also asked on how many locomotives or how many running hours the author based the figures in the paper. The capital cost of diesel shunting locomotives had been their worst enemy. He thought that much might be done in reducing the cost of the transmission. The low wear figures were excellent, and were a tribute to the magnetic filters; his own firm put in fairly coarse-mesh filters in series with the bypass filters, and the combination eliminated all dirt in the engine. It might be found economic to scrap the locomotives in less than 30 years. He was sure it would be possible in the future to buy two new engines, each to last 15 years, at less cost than the present engine which was to last 30 years. Costs could be reduced by taking advantage of certain design aspects.

Mr. W. Cyril Williams said that he wondered if the mileages in the paper were based on speedometer records or calculated from an assumed shunting speed. A figure of 6 m.p.h. used to be reckoned for steam shunting, which in his early days amounted to about 36,000 miles a year, compared with the 8,000 miles a year given for diesel-electric engines in the paper.

Mr. H. Holcroft commented on the author's suggestion of a fuel tank of 28 days' capacity. Few yards would require an availability approaching 90 per cent., so in most cases, the locomotives could go to the service tank more frequently. There would be difficulty in finding space for a tank to hold 28 days' fuel supply, and the deadweight to be carried would be much increased; some of that fuel oil would be used in starting and overcoming inertia, which was lost to the brake blocks. Perhaps a travelling fuel tank might be considered for feeding locomotives in a busy yard.

Mr. H. G. McClean asked what was the radius of the minimum curve encountered, and whether there was any provision for side-play in the centre axle of the six-coupled locomotive. Could the author indicate the relative present-day costs of a diesel-electric shunting locomotive and, say, the military "austerity" 0-6-0 saddle-tank locomotive? He asked if there was any evidence to support the view that better adhesion was secured with side-rod drive than the individual axle drive. Many Continental railways had changed to the latter, to their own satisfaction at least.

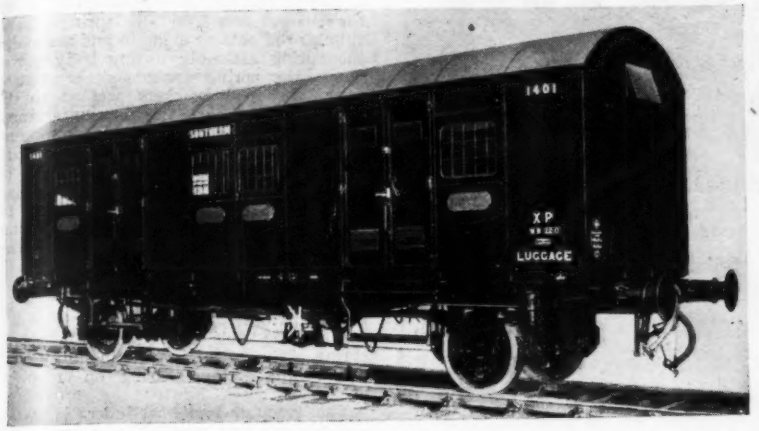
Mr. T. Henry Turner referred to tyre life which might be increased by changing to a softer grey iron for the brake blocks. He had encountered four cases of fractured big-end bolts, similar to that shown by the author. Good radii under the head and at the thinner portions were needed; the thread should be a "vanishing" one, because failure so frequently occurred in the last thread. Their cause of failure was undoubtedly fatigue, perhaps due to insufficient stiffness in crankshaft or strap; or to the removal of a shim from, say, the front whilst omitting to remove a corresponding one from the back. The idea of cleaning the air, as well as lubricant fuel oil, was a challenge to the steam locomotive designer. Much dirt found its way into steam locomotive cylinders at present, and he knew of no attempt to stop it by devices such as were used on stationary steam plants.

Mr. E. S. Cox observed that as soon as a period exceeding five years could be envisaged between major overhauls, the superiority of the diesel over the steam engine was established, as it was a statutory requirement that steam boilers must be examined after five years. The use of the nose-suspended motor had a great advantage in permitting the use of outside springs and axleboxes, which greatly facilitated maintenance. He asked whether the change made in the control gear improved the shunting characteristics or whether the object was to achieve control by a cheaper and simpler method. He also asked whether the design as it stood could be modified readily to enable trips to be undertaken at speeds over 15-20 m.p.h.

The author, in a preliminary oral reply, said that Mr. Andrews would be interested to know that the estimated life of the diesel-electric shunter was placed as low as ten years in very early days; but with further experience it was increased to twelve, then fifteen; the present estimate of thirty years was put forward with every confidence. Much depended on the exclusion of dust and dirt. In the new substations, everything possible was kept in glass cases, and failures were minimised. He was very glad that Mr. Paxman found that the magnetic filter answered so well in removing ferrous material which would get into the engine. Mr. Tritton would find from the paper that a figure of 5 gal. per 1,000 hours had now been achieved for lubricating oil consumption. In reply to Mr. Williams, the figures in the paper represented actual mileage, and the speed averaged 1¼ m.p.h. He did not think Mr. Holcroft's suggestion of a travelling tank would be popular with the operating department. At present, diesel-electric locomotives were filled for 14 days, and when shifts were changed the old driver got off and the new one got on wherever the locomotive happened to be. A fuel load for 28 days should prove to be of great advantage. In reply to Mr. Cox, one main difficulty as to the period between major overhauls was due to the tyres. He hoped a method would be evolved of replacing the whole axle in the shed by a reconditioned one. He did not consider a figure of five years between major overhauls to be over-optimistic, but experience had taught them to progress slowly. Mr. Cox pointed out the great advantage of the nose-suspended motor in making possible the use of outside springs. On the old design it was very difficult to change a broken spring; helical springs had been tried fairly successfully, though the engine bounced up and down a good deal. The original control was a "vernier" control, with fine adjustment, for hump shunting. The last model, however, was almost equivalent to the regulator of a steam locomotive, giving infinitely variable speed; the need for a vernier control had gone, and the new type was simpler to maintain. With regard to trip working, it was not possible to have more speed or more tractive effort in the present space; a new design would be needed, and a bigger diesel, or two diesels (as in the U.S.A.) would be necessary.

Southern Railway New Passenger Luggage Van

Increased capacity with 2 ton 16 cwt. saving in tare weight



AS was briefly recorded in our March 10 issue, the first of ten passenger luggage vans of a new type, which are under construction by the Southern Railway, is in service. By courtesy of Mr. O.V. Bulleid, Chief Mechanical Engineer, Southern Railway, we are able to publish some details of the new vehicle, the design of which may give an indication of a form of construction likely to be developed after the war, as well as a brief account of the factors considered in deciding the form which it should take.

Four-wheel long wheel-base vans are used extensively by the Southern Railway, as they are well suited to its traffic requirements. They are used for all types of traffic and are designed to run in passenger trains at high speeds; and they represent, therefore, a type of vehicle suitable for use as the prototype of a design incorporating any radical change in form or construction. The following considerations were taken into account in designing the new four-wheel van:—(1) Reduced weight consistent with strength; (2) avoidance of sudden shock to passengers or goods; (3) new materials, such as plastics, should be used where suitable; (4) advantage should be taken of the latest methods of fabrication; and (5) maintenance cost should not be increased. The advance in the manufacture of plastic materials has been remarkable. The old criticism of brittleness has been met by improvement in the materials themselves and by the introduction of laminated plastics in which cotton fabric is incorporated in the material.

The most recent development has been in the use of reinforcement, consisting of woven high-tensile steel wire and cotton, of patented design. This form of reinforced plastic has been adopted for the new van, and represents the first time that plastic materials have been used in the external construction of rolling stock. Due to war conditions, the colour selected is black; but any colour can be incorporated in the plastic, and would be impervious to attack by acid or atmospheric conditions. The sheets could be made only 6 ft. 6 in. by 3 ft. 3 in., due to press limitation, and the body therefore had to be designed to suit.

The light weight of the material (11½ oz. per sq. ft.) suggested a saving of weight in all other parts of the vehicle, and the unknown behaviour of the plastic under railway conditions, as well as the consideration of avoidance of damage to the load, suggested a design in which the body should be protected from shock. The convenient way in which to obtain the latter result was to separate the body from the main frame and introduce some form of spring-cushioning device.

This investigation led to the construction of a lightened form of body, and light channel sections 2½ in. by 1¼ in. made from 12-gauge steel strip, cold rolled, were generally used. The sections forming this framing were welded electrically in a jig before being welded to the floor framing of the body, which is

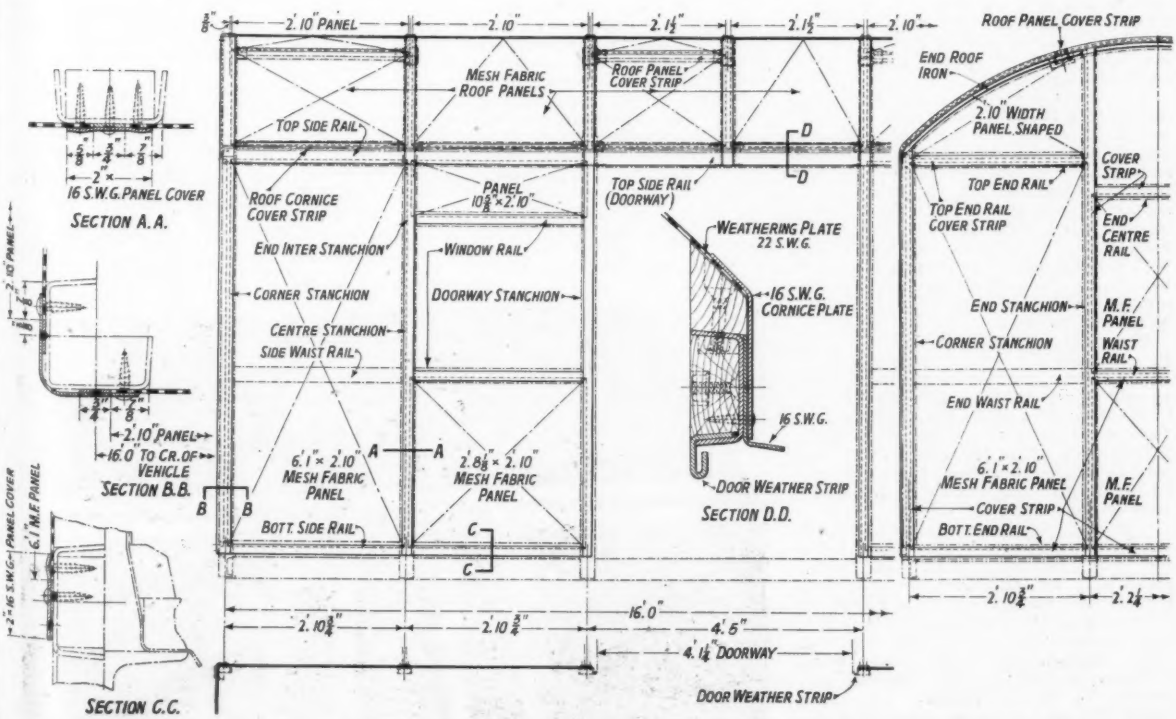
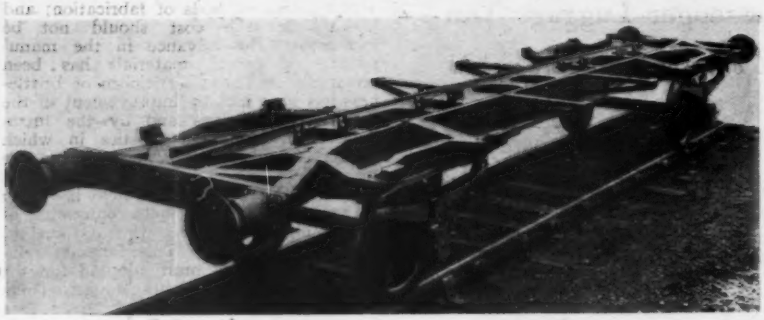
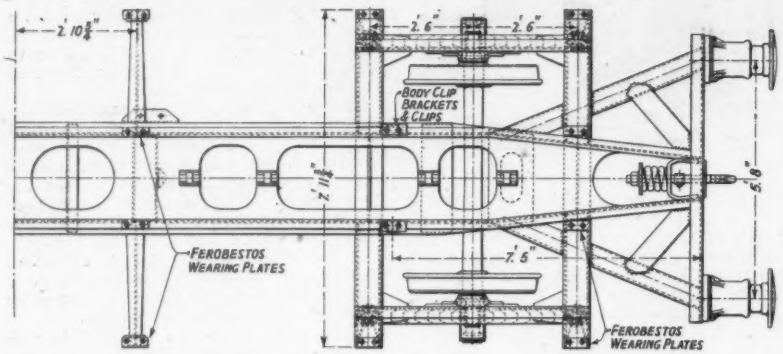


Diagram showing main dimensions and constructional details of part of the van, and methods of fastening the plastic roof and side panels



General view of the underframe



Plan view of one end of underframe

made of rolled channel section steel 4 in. by 2 in.

The roof sticks are made of ash laminations glued together on a former to the required shape and bolted to the cant rail brackets welded to the top side rail of the body framing. It is expected that the hoop sticks will retain their correct curvature.

Securing of the panels to the steel framing needed special consideration, and it was decided to screw the panels into the pillars; furring strips are fitted in channel sections for this purpose. The panels are prevented from working by means of a supporting strip placed at the lower edges of the panels. Before the panels were fixed in position, the framing was coated with a bitumastic compound, as were the panel mouldings. These mouldings are screwed into the furring strip further to secure the panels.

The sides and ends of the interior of the van are lined with 3½ in. by ⅛ in. casing boards. The floor boards are oak 1¼ in. thick, suitably grooved to take loose tongues well bedded in creosote. The doors are of light sheet steel, S.W.G. No. 16, fitted with louvres, and may be held open in any desired position by the centre hinge, which embodies a spring-operated cam.

The centre longitudes of the floor framing form a cradle to house the springs of the body cushioning gear. The underframe is of the cantilever principle; solebars are not used. The centre girders are fabricated from plate welded together to form a girder section, approximately an "H" section, giving considerable lateral stiffness, as well as weight-carrying properties, to the underframe. The cantilevers also are fabricated from plate and welded to the main girder; rolled section is used for the headstocks alone. The headstocks are welded to the pressed steel members forming the diagonals. The buffing loads are transmitted through the diagonals to the centre girder, which member also takes the draft pull direct.

The body, as already stated, is spring-cushioned and independent of the main frame; it can move in a longitudinal direction although it cannot come adrift due to the provision of holding-down brackets. A similar arrangement has been applied to open and covered goods wagons, and has been found most effective in reducing damage to loads. As the body does not have to take any buffing or draw stresses, it can be lightened to the extent indicated above.

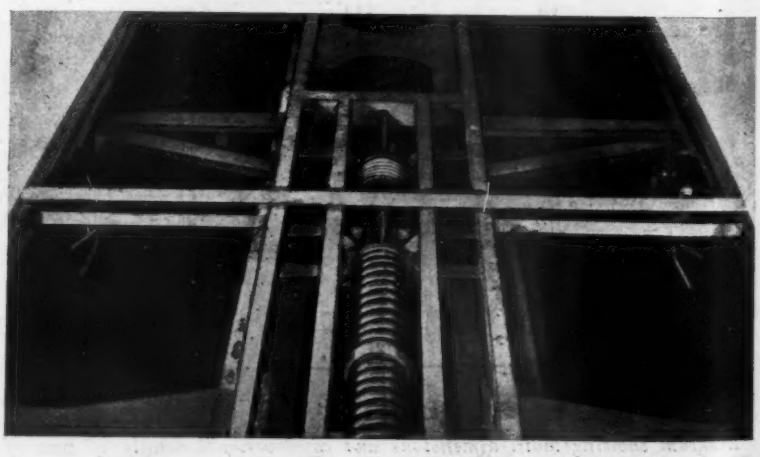
The cushioning springs are arranged in tandem and the initial body movement is taken by the steel coil springs; when these are partly compressed the load is also borne by the rubber springs. The latter give a higher resistance during the final movement of the body, which they bring to rest after it has travelled 11 in.; it is restored to its original position by the energy stored in the springs. The tubular rod acts as a guide and maintains the spring assembly during body movement; the spring washers make contact with U-shaped brackets welded to the underframe. The bearing spring arrangement represents a departure from customary practice; the weight of the body and underframe is passed, by means of volute auxiliary springs, housed in spring cups forming part of the cantilevers, to laminated springs. There is no physical connection between these springs. The medium employed for this purpose is a double-ended shouldered spigot; one end of each spigot is inserted in a hole in the laminated spring, and the other end fits in the hole formed in the volute spring. The spigot is kept in position by the volute spring bearing on a spigot collar.

The vacuum-brake cylinder is fitted between the two vertical members of the centre girder. It is of the Prestall lever type and affords considerable saving in the weight of the brake gear. The brake pull-rods are coupled direct to the cylinder levers, and this dispenses with brake-shaft levers and so on. A hand brake also is provided.

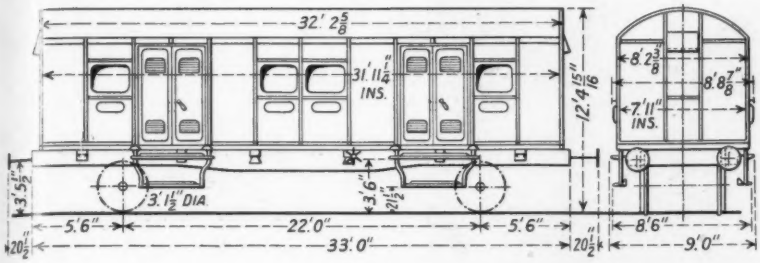
The axleboxes are of the solid type, and have open fronts and throw-over lids. They are fabricated from thin mild-steel plates, electrically welded, and are fitted with the standard R.C.H. wagon bearing, with a fabricated slipper. This has effected a saving in weight of 65 lb. for each axlebox compared with the R.C.H. standard 9 in. by 4½ in. divided cast-iron type. The wheels used are R.C.H. standard 13-ton wagon light type (solid) of 3 ft. 1 in. dia., having 9 in. by 4½ in. journals, in place of carriage wheels 3 ft. 6 in. dia. with 9 in. by 4½ in. dia. journals.

The main dimensions of the new van and one of the ordinary type are:—

	New	Ordinary
Buffer height	3 ft. 5½ in.	3 ft. 5½ in.
Length over buffers ...	36 ft. 5 in.	35 ft. 10 in.
Wheelbase	22 ft. 0 in.	21 ft. 0 in.
Length over headstocks ...	33 ft. 0 in.	32 ft. 0 in.
Width over top stepboards	9 ft. 0 in.	8 ft. 10½ in.
Length over body... ...	32 ft. 2⅜ in.	32 ft. 0 in.
Width over body	8 ft. 2⅜ in.	8 ft. 4½ in. (body stanchions)
Width inside body ...	7 ft. 11 in.	7 ft. 8½ in.
Rail to top of roof ...	12 ft. 4½ in.	12 ft. 0 in.



Part view of main frame, showing body-cushioning gear



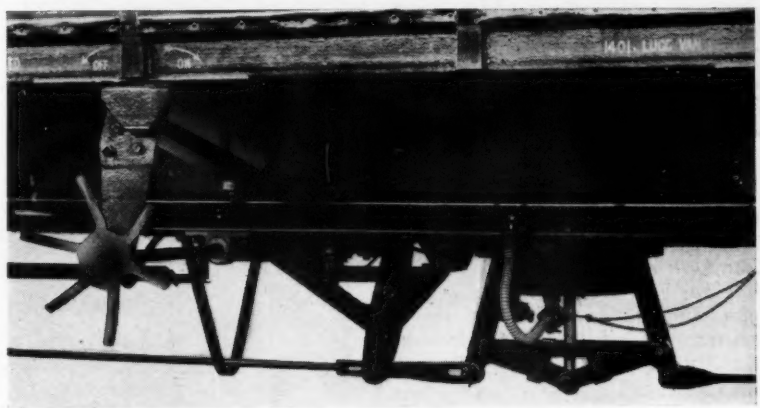
Left: Principal dimensions of van

Below: View of vacuum-brake cylinder and rigging

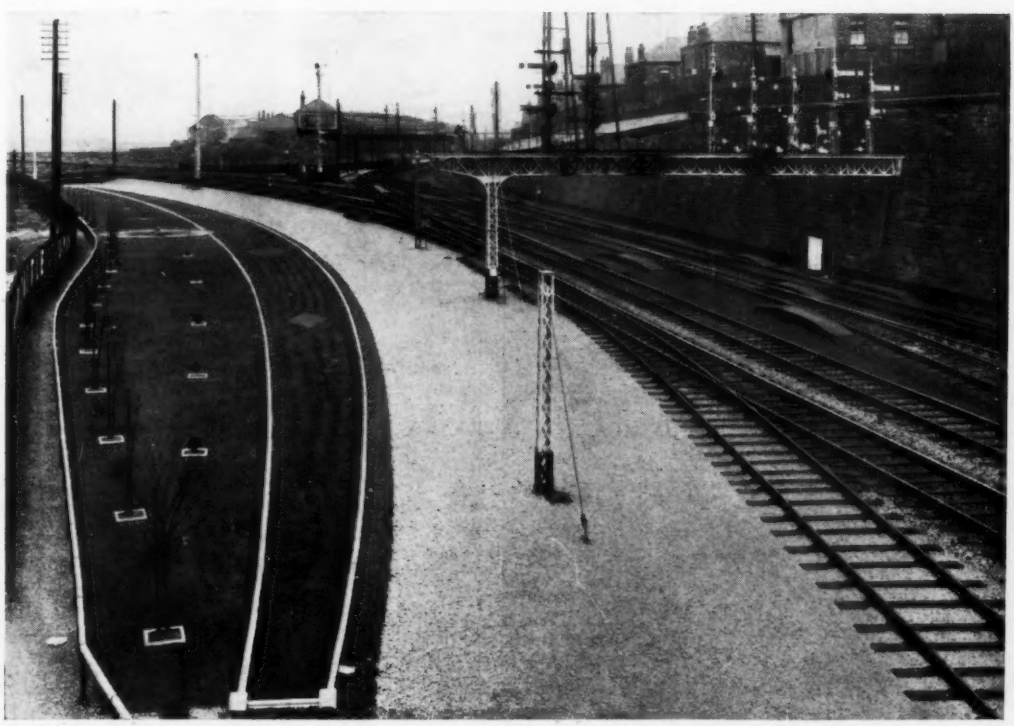
The following table gives the comparative weights of the new van and of one of the ordinary design:—

	New			Ordinary		
	tons	cwt.	qtr.	tons	cwt.	qtr.
Weight of underframe	2	7	3	3	0	0
Body structure ...	1	7	2	1	14	0
Wheels and axle (one)		19	1	1	3	2
Axlebox (one) ...			3½		1	2½
Tare	10	4	0	13	0	0
Total saving	2 tons 16 cwt. (or approximately 20 per cent.)					

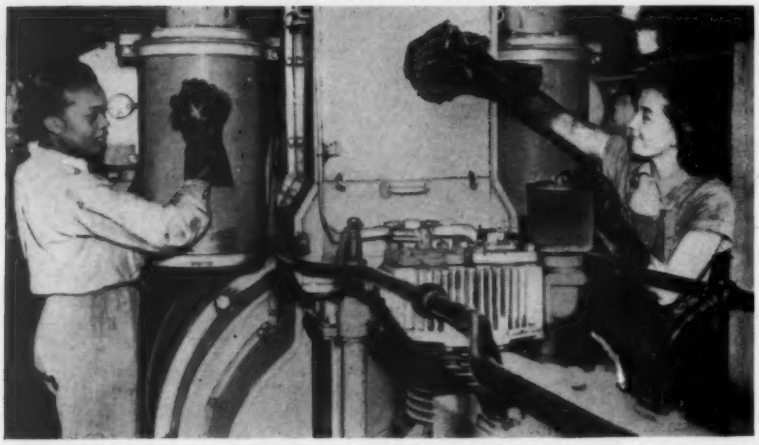
The inside capacity of the new vehicle is 1,848 cu. ft., compared with the 1,808 cu. ft. of the standard type. The wire-reinforced plastic panels are one-quarter the weight of -in. steel panelling or of ⅞-in. deal sheeting of the same surface area.



An Example of a Well-Kept Stretch of Running Lines



An excellent example of the attractive appearance presented by carefully kept track and tidy surroundings. The above illustration is of a well-known North-East Coast junction; in future issues some contrasts between tidy and untidy railway views will be shown



Women Employees on the U.S.A. Railways

Above: Two women workers in the Washington terminal round-house cleaning a diesel engine. A separate wing has been built in the engine yard office building for dressing rooms, showers, and lockers for the exclusive use of women employees

Right: Examples of outdoor and indoor service performed by women railway employees. The first illustration is of the first women, employed by the American railways, to operate points and crossings, and the second is the first U.S. woman train dispatcher

A woman operating a drill press in a railway workshop

Using a grease gun on a locomotive

As on the British railways, the railways of the United States of America have taken into their service large numbers of women to replace men employees who have joined the Forces. Women workers are now performing a wide variety of tasks, many of which were previously considered exclusively within the sphere of men

RAILWAY NEWS SECTION

PERSONAL

Sir William Stanier, F.R.S., has retired from the position of Chief Mechanical Engineer, L.M.S.R., but has been retained by the company in the capacity of Consultant. Mr. C. E. Fairburn, who has been Acting Chief Mechanical Engineer since October, 1942, has been appointed Chief Mechanical Engineer.

From the Supplement to *The London Gazette*, March 28:—

Royal Engineers—Engineer & Railway Staff Corps: Theodore Eastaway Thomas, C.B.E. (313550), to be Lt.-Colonel, March 4, 1944.

Colonel Thomas is General Manager of the London Passenger Transport Board.

CANADIAN NATIONAL RAILWAYS

Major F. L. C. Bond, D.S.O., has retired from the position of Vice-President & General Manager, Central Region, Canadian National Railways, after 45 years' service. He is succeeded by Mr. J. F. Pringle, Vice-President & General Manager, Atlantic Region. Mr. J. P. Johnson, Chief of Transportation for the system, has been appointed Vice-President & General Manager, Atlantic Region, and Mr. J. W. Wardlaw, General Superintendent of Transportation, Central Region, becomes Chief of Transportation.

Mr. W. R. Devenish, Vice-President & General Manager of the territory from the head of the Great Lakes to the Pacific coast, has been appointed Vice-President, Western Region. The increase of traffic in this area has made it necessary to enlarge the supervisory administration, and this is being effected by the appointment of Mr. W. C. Owens, Assistant General Manager of the region, to the new position of General Manager; he will relieve Mr. Devenish of much of the direct work concerning goods and passenger operation.

Mr. Walter Woodbine Parish has been appointed a Director of the Rosario Drainage Co. Ltd., in place of the late Sir Follett Holt. Mr. Parish is Chairman of the Vulcan Foundry Limited and is on the boards of the Taltal Railway Co. Ltd. and other companies.

SOUTHERN RAILWAY APPOINTMENTS

The directors of the Southern Railway Company have approved the appointment of Mr. Conrad Gribble, Assistant Engineer (New Works & Bridges), as Deputy Chief Civil Engineer, as from April 1. Mr. Gribble will continue to deal with bridges and new works matters.

The following alterations in titles also have been approved, as from the same date:—

Lt.-Colonel G. L. Hall, Assistant Engineer (Signals & Telegraphs), to be Signal Engineer.

Mr. A. Dean, Assistant Engineer (Maintenance), to be Maintenance Engineer.

Colonel A. B. Chester, General Assistant, to be Assistant Engineer (General).

Mr. L. J. Boucher, Chief Assistant to Assistant Engineer (Signals & Telegraphs), to be Assistant Signal Engineer.

Mr. J. R. Scott remains Architect to the company under the Chief Civil Engineer.

Mr. Frederick William Dingley, whose death we recorded last week, retired in 1927 from the position of Divisional Superintendent of Motive Power, Western Division, L.M.S.R. Mr. Dingley had a long experience with the former London & North Western Railway, principally in connection with the Locomotive Running Department. He was Assistant Locomotive Foreman, and afterwards Foreman, at Willesden Steam Sheds, and in 1909 became Assistant to the Chief Mechanical Engineer for the London Division. Subsequently he was transferred to Crewe to take up the position of Road Motor Superintendent, in charge of both

The late Mr. F. W. Dingley

Divisional Superintendent of Motive Power, Western Division, L.M.S.R., 1923-27

the mechanical and commercial sides. Mr. Dingley was appointed Outdoor Mechanical Superintendent in 1919, and a year later became Chief Locomotive Running Superintendent. In connection with the amalgamation with his system of the Lancashire & Yorkshire Railway in 1922, Mr. Dingley was appointed Superintendent of Motive Power, Division "A," as from January 1 of that year. On the formation of the L.M.S.R., he became Superintendent of Motive Power for the old L.N.W.R. system, with headquarters at Crewe, which position he held until his retirement.

The late Mr. John G. Robinson, who was Chief Mechanical Engineer of the Great Central Railway from 1902 to 1923, left £81,786.

Mr. Evan B. Hawken, Staff Registrar, Canadian National Railways, who, as recorded in our March 24 issue, has been appointed Assistant Secretary to the company, and retains the position of Staff Registrar, was born in 1895. He joined the former Grand Trunk Railway at Ottawa in 1912 as junior clerk, and later became Secretary to the Superintendent. In 1918 he enlisted in the 72nd Field Battery, C.E.F., and in 1920 returned to railway service as Chief Clerk with the Grand Trunk Arbitration Board at Montreal. In 1922 Mr. Hawken became Secretary to the Vice-President, and later was transferred to the Bureau of Economics as Secretary to the Director. in 1929 he became Office Assistant, and in the next year Chief Clerk, to the Chairman & President. Mr. Hawken was appointed Staff Recorder in 1932 and Staff Registrar in 1940.

Colonel Eric Gore-Browne, on being appointed Chairman of the Southern Railway Company, has resigned the Chairmanship of Glyn, Mills & Company, but remains an Ordinary Director. Lt.-Colonel F. M. G. Glyn, who has been released from his military duties, has been appointed Chairman & Managing Director. Colonel Glyn is a Director of the London Midland & Scottish Railway Company.

In consequence of the death of Sir Follett Holt, Mr. Stanley J. Adams, a Director of the company, has been appointed Chairman & Managing Director of the Pullman Car Co. Ltd.

Mr. E. J. Fox is retiring from the Chairmanship of Davy & United Engineering Co. Ltd., but will remain on the board. Mr. D. F. Campbell has been appointed Chairman. Mr. A. C. Macdiarmid, on his appointment as President of the British Iron & Steel Federation, has resigned from the board of the company. Mr. Fox is a Director, and Mr. Macdiarmid is Chairman, of Stewarts and Lloyds Limited.

We regret to record the death on March 31, at the age of 57, of Mr. Charles Beaumont, Editor of the *Great Western Railway Magazine*. Mr. Beaumont sustained injury in a recent air raid, and collapsed and died shortly after leaving hospital. He joined the G.W.R. in 1908 and for a number of years he was on the Publicity Staff of the Superintendent of the Line, and was engaged in part in the preparation of "Holiday Haunts." He went to the General Manager's Office in June, 1942, when he became Acting Editor of the *Great Western Railway Magazine*. He was appointed Editor in February, 1944.

We regret to record the death on March 26 of Mr. John Marris Roberts, B.A., A.M.Inst.C.E., who retired from the position of District Engineer, Athlone, Great Southern Railways (Eire), in 1930. He was the youngest son of the late Mr. Thomas Roberts, formerly of the Irish Land Commission. Mr. Marris Roberts was educated at the Royal School, Armagh, and at Trinity College, Dublin, where he graduated in Arts and Engineering in 1888. He became engaged in the Finn Valley Drainage Scheme, and then in the Parliamentary Survey of the Donegal Central Light Railways, and afterwards in surveys of several large estates for sale by the Irish Land Commission. In 1890 he was employed on the construction of the City of Dublin Junction Railways as assistant to Mr. Challoner Smith, to whom he served as assistant on the Dublin, Wicklow & Wexford line. In 1895 he joined the Waterford, Limerick & Western Railway as Resident Engineer, and, on the amalgamation with the Great Southern & Western Railway, was appointed Assistant Engineer at Cork. He became District Engineer, Athlone, Great Southern Railways, in 1925. During the war of 1914-18 Mr. Roberts was in charge in France of No. 9, the first Irish Civilian Railway Company, working on the Arras front.

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Memorial Service for Sir Follett Holt

A memorial service for Sir Follett Holt was held on March 30 at St. Michael's, Cornhill. Among those present, in addition to family mourners, were :—

Mr. E. B. Baring, Director, Baring Bros. & Co. Ltd.; Sir Ion Hamilton Benn, Member, Port of London Authority; Lord Bicester, Director, Associated Electrical Industries Limited; Messrs. B. H. Binder, Director, Argentine North Eastern Railway Co. Ltd. and Entre Rios Railways Co. Ltd., and Chairman, Paraguay Central Railway Co. Ltd.; A. J. Boyd, Managing Director, Metropolitan-Cammell Carriage & Wagon Co. Ltd.; Percy Brown, Secretary, Cordoba Central Trust Limited.

K. Carlisle, Entre Rios Railways; Sir Patrick Ashley Cooper, Governor, Hudson's Bay Company, and Member, London Passenger Transport Board.

Messrs. Jose Dodero, Chairman, Argentine Chamber of Commerce in London; G. A. Doswell, Entre Rios Railways; H. C. Drayton, Director, Buenos Ayres & Pacific Railway Co. Ltd., Central Argentine Railway Limited, and Buenos Ayres Great Southern Railway Co. Ltd.

Sir Montague Eddy, Chairman, Buenos Ayres Great Southern Railway Co. Ltd. and Buenos Ayres Western Railway Limited; Messrs. W. J. Eldridge, Director, Argentine Great Western Railway Co. Ltd.; F. O. Ellis, Secretary, Great Western of Brazil Railway Co. Ltd. (also representing Mr. W. M. Codrington, Chairman, and Mr. Donald Moir, Director).

R. F. Fisher, Director, North Western of Uruguay Railway Co. Ltd.; Lord Forres, Director, Central Argentine Railway Limited, Buenos Ayres Western Railway Limited and Buenos Ayres & Pacific Railway Co. Ltd.; Messrs. S. J. Forster (representing Lord Essendon, Chairman, Furness, Withy & Co. Ltd., and Vice-President, Federation of British Industries).

Cyril Gamon (representing the Lord Mayor); W. J. George, Secretary, Argentine North Eastern Railway Co. Ltd. and Entre Rios Railways Co. Ltd.; Colonel Eric Gore-Browne, Chairman, Southern Railway Company; Messrs. J. A. Goudge, Chairman (London), British-Argentine Railway Committee, and Chairman, Buenos Ayres & Pacific Railway Co. Ltd.; Robert Graham, Secretary (London), British-Argentine Railway Committee; G. H. Griffith, General Manager, Pullman Car Co. Ltd.

R. A. Hamlyn, Director, Brazil Railway Company; Brigadier-General F. D. Hammond, Chairman, Central Uruguay Railway Co. of Monte Video Ltd.; Lt.-Colonel R. T. Harper, Director, Buenos Ayres Great Southern Railway Co. Ltd., Buenos Ayres Western Railway Limited and Bahia Blanca & North Western Railway Co. Ltd.; Mr. Neil Henderson (representing Messrs. Livesey & Henderson); Captain the Hon. H. E. Fitzalan-Howard, Director, Pullman Car Co. Ltd.; Mr. R. J. Howley, Director, Buenos Ayres & Pacific Railway Co. Ltd., and Chairman, British Electric Traction Co. Ltd.

Miss Iliffe, British-Argentine Railway Committee.

Messrs. J. A. Kay, Editor, *The Railway Gazette*; A. S. Matthews, Secretary, Central Argentine Railway Limited; H. Mathias, Entre Rios Railways; James Maxwell, Secretary, Thos. Cook & Son Ltd. (representing Sir Bernard Docker, Chairman, Birmingham Railway Carriage & Wagon Co. Ltd.; Mr. F. D. Docker, Vice-President, Federation of British Industries; and Stanley Adams, Chairman, Thos. Cook & Son Ltd., and Director, Pullman Car Co. Ltd.); A. J. Medlycott, Director, Midland Uruguay Railway Co. Ltd. and Uruguay Northern Railway Co. Ltd., and Secretary, Central Uruguay Railway Co. of Monte Video Ltd. and North Western of Uruguay Railway Co. Ltd.; J. R. Miller, Entre Rios Railways.

Colonel William Parker, Chairman, Interoceanic Railway of Mexico (Acapulco to Vera Cruz) Limited, and Director, Alcoy & Gandia Railway & Harbour Co. Ltd. and British Automatic Co. Ltd.; Mr. C. H. Pearson, Director, Central Argentine Railway Limited, and Chairman, Leopoldina Railway Co. Ltd.; Lord Plender, Senior Partner, and Mr. F. Read, Deloitte, Plender, Griffiths & Company.

Messrs. C. Ellison Rich, Secretary, Buenos Ayres & Pacific Railway Co. Ltd.

T. L. Taylor, Chairman & Managing Director, Taylor Bros. & Co. Ltd. and Director, Metropolitan-Cammell Carriage & Wagon Co. Ltd.

E. Uzzell, Welfare Officer (representing Mr. E. J. Missenden, General Manager), Southern Railway.

F. G. A. Vallancey, Cable & Wireless (Holding) Limited (also representing Sir Edward Wilshaw, Chairman & Managing Director, Cable & Wireless Limited); Sir Francis Voules, Chairman, Southern San Paulo Railway Co. Ltd. and Pará Electric Railways & Lighting Co. Ltd.

Lord Wardington, Chairman, Bank of London & South America Limited, and Member of Council, Federation of British Industries; Messrs. John Williamson, Director, Argentine North Eastern Railway Co. Ltd. and Entre Rios Railways Co. Ltd.

E. A. Young, Argentine Chamber of Commerce in London.

Mr. C. D. Gibb has been appointed a Director of A. Reyrolle & Co. Ltd.

Mr. I. A. R. Stedeford, Managing Director, has been appointed also Chairman of Tube Investments Limited, in succession to Mr. J. Herbert Aston, who is retiring from that position but remains a Director. Mr. G. S. Maginness has been appointed Deputy-Chairman.

Mr. George Ellson, who retired recently from the position of Chief Engineer, Southern Railway, was presented with a silver fruit dish by Mr. E. J. Missenden, General Manager, on behalf of a number of chief officers of the company, at Deepdene on March 17. Mr. Ellson is seen (left) shaking hands with Mr. Missenden. Standing behind are (left to right) Messrs. S. E. Clark, Acting Secretary; J. H. Laundy, Assistant Audit Accountant; W. J. England, Superintendent of Operation; R. M. T. Richards, Traffic Manager; W. J. Sawkins, Assistant Accountant; A. Endicott, Estate & Rating Surveyor (behind Mr. Missenden); A. E. Moore, Audit Accountant (behind Mr. Endicott); A. D. Cook, Chief Cashier; E. F. Marsh, Assistant to Accountant; and C. Grasemann, Public Relations & Advertising Officer

TRANSPORT SERVICES AND THE WAR—236

Withdrawal of Restaurant Cars

As we recorded briefly last week, the Railway Executive Committee has announced that restaurant cars on ordinary main-line services, after their customary withdrawal over the Easter period, will not be reinstated for the time being. At the beginning of the war restaurant cars were withdrawn for a short period. After their restoration the number of services was reduced gradually; by the end of 1941, only half the number of services (426) was being operated. In May, 1942, the services were reduced to 62. In our issue of July 17, 1942, we published a table giving a complete list of the trains in Great Britain on which restaurant car facilities continued to be provided, and on July 24 of the same year (page 75) discussed the policy in the present war in relation to that of 1917.

Easter Travel in Ireland

In consequence of Government restrictions, the Great Northern Railway (Ireland) has announced that it will be unable to operate additional train services during the Easter Holiday period. Travel tickets are obtainable in advance at stations as from March 22, and passengers travelling on main-line trains from Dublin, Belfast, and Londonderry may secure reservation tickets at a charge of 1s. each. Long-distance passengers were advised to travel before April 7.

Women Volunteers for Canals

There are now vacancies for more women volunteers to be trained to operate canal boats. The original training scheme, begun experimentally by the Grand Union Canal Carrying Company in 1942, has been re-organised, and training will now be continued under the supervision of the Ministry of War Transport. Training usually lasts about two months, during which trainees will be given full instruction in the management and handling of canal craft and the method of operating the locks. They will live, eat, and sleep on the boats, which travel along the canals carrying essential cargoes. Payment during training is at the rate of £2 a week, and a week's leave, without pay, may be taken at the end of every trip, which normally takes about three weeks. On completion of training, if found suitable, trainees are given control of a pair of boats, consisting of a motor boat with a "butty." The earnings accruing from the tonnage moved are shared by the three members of the crew and are subject to a minimum wage of £3 per week. Above this minimum the earnings of the crew depend largely on their own experience and exertions.

Sunday Loading in Germany

Sunday loading of wagons does not, apparently, meet with the unstinted approval of all classes of shippers in Germany, to judge from a recent decision of the Berlin Reichsbahn management to exclude temporarily (for one week) from the allocation of empty wagons such shippers who, although able to proceed with loading on Sundays, did not do so without being able to produce any reasonable ground for their refusal. Those who had been disinclined to load on Sundays therefore had no wagons made available to them for a week. The Reichsbahn management hopes that this form of "mild coercion" will secure compliance. It is stated that a substantial percentage of firms turns a deaf ear to the Reichsbahn exhortation to use Sundays for loading. The proportion of goods wagons not handled by shippers on Sundays amounted to as much as 40 per cent. in the Dresden area of the Reichsbahn management some time ago.

Deteriorating French Transport

The daily average of full wagon loadings on the French National Railways is understood to have reached a new low level in October last, when it amounted to but 19,249, compared with 20,017 in September, 1943, and with 26,644 in October, 1942. It may be recalled that, in an editorial comment in our March 17 issue (page 271), we pointed out that wagon loading in France had deteriorated in recent months by anything up to 30 per cent., compared with a year earlier.

Horse-drawn Motorbuses at Amsterdam

Motorbuses are a thing of the past in Amsterdam because of lack of fuel, lubricants, and tyres, and tram services do not operate on Sundays. Horse-drawn motorbuses therefore operate. The space formerly occupied by the engine and driver is used as a coachman's box and for passengers' luggage. Such a vehicle, drawn by two horses, is called a *paardillon* (from the Dutch word *paard* meaning a horse). These buses have their town terminus at the Amsterdam Central Station, whence services operate in many directions.

The Fuel Problem in Sweden

Firewood used by the Swedish State Railways for their steam locomotives is stated to average 90,000 cu. metres (3,178,530 cu. ft.) a month at present, or at the rate of 1,100,000 cu. metres (38,848,700 cu. ft.) a year. As 6½ cu. metres (229½ cu. ft.) of wood are equivalent to one *tonne* of coal, the saving in locomotive coal amounts to about 170,000 *tonnes* per annum. Actually, between the date wood firing was introduced on the Swedish State Railways and July 1, 1943, some 370,000 *tonnes* of hard coal have been saved by this method. On the other hand, wood firing represents a heavy additional economic burden, as it is roughly twice as costly as coal firing. Moreover, wood firing necessitates additional personnel. Since early in 1942, peat firing has been used on the Swedish State Railways in southern Sweden where extensive peat workings are being exploited. The fuel position of the Swedish State Railways would have been much more serious during the present war had not about 86 per cent. of the total transport performance been effected by electrically-worked services, exclusive of the Lapland iron-ore railway.

Spanish Air Traffic

Changes have been announced in the financial structure of Iberia, the Spanish national air traffic company. Of the share capital, 51 per cent. is owned by the State (Air Ministry), and 49 per cent. by the Instituto Nacional de Indústrias (Spanish National Industrial Institute); the latter holding may not be sold without the approval of the Government. The company's activities have been severely curtailed during the past year because of petrol shortage. The company's predecessor was the Lape (Líneas Aéreas Postales Españolas). The services operated by the company at present are: Madrid-Tetuan-Sidi Ifni-Cabo Juby-Las Palmas (once weekly); Barcelona-Madrid-Seville-Tangiers-Tetuan (daily, except Sundays); Barcelona-Palma de Majorca (daily, except Sundays); Madrid-Lisbon (daily, except Sundays); Valencia-Palma de Majorca (thrice weekly); Tetuan-Melilla (daily, except Sundays); Las Palmas-Teneriffe (twice weekly); Santa Isabel-Bata, Rio Muni colony (twice weekly). The Spanish air traffic system is connected with Central Europe by an air service operated by the Deutsche Luft Hansa on Mondays, Wednesdays, and Fridays between Berlin and Barcelona, and on Tuesdays, Thursdays, and Saturdays in the reverse direction; it calls at Stuttgart and Lyons.

Swiss Railway Fare and Rate Increases

In connection with the increases in fares and rates on Swiss railways which became effective on April 1 (see our February 11 issue, page 146) an official statement issued on behalf of the Swiss Federal and the privately-owned railways as well as shipping services on the lakes says that the raising of the age limits from 4 to 6 years for children travelling free and from 12 to 16 years for travel at half fare has now been adopted, and also came into force on April 1. Revised details now available indicate that single fares are increased by 20 per cent., with maxima of fr. 3, 2·10, and 1·50 for first, second, and third-class fares respectively. For return tickets the increase is 10 per cent., with maxima of fr. 2·40, 1·70, and 1·20 respectively. For Sunday return tickets the same increase applies as for single fares. For Sunday and holiday tickets, as well as ten-day circular tickets, the increase is the same as for ordinary return tickets, with the same maxima. For school parties the increase on return tickets is 10 per cent. with a maximum of 60 centimes (third class). There is no increase on family tickets. General season tickets (for the whole of Switzerland) are increased by 10 per cent. for eight-day to monthly seasons, and by 5 per cent. for annual tickets.

The 10 per cent. increase in ordinary and express goods rates, luggage, and livestock rates, came into force on March 1. No increase is applied in respect of distances over 150 km. (93 miles), so that actually the increase works out to be 8 per cent. for a distance of 200 km. (124 miles), or 6 per cent. for 300 km. (186 miles).

Interstate Travel in Australia

The report of the Victorian Railway Commissioners for the year ended June 30, 1943, refers in some detail to the restrictions on interstate civilian travel in Australia since July 1, 1942, under an Order dated June 17, 1942. This limits civilian travel to cases directly or indirectly connected with the war effort, or in which adequate business reasons are presented, or genuine personal hardship would otherwise be involved. A permit has to be obtained before an interstate journey can be made, except to a town on the border of an adjacent State. Permits for travel to Western Australia are issued direct by the Commonwealth Land Transport Board, but all others are issued on behalf of the board by the staff of the appropriate State Railway Administration. In the case of Victoria, the work involves the full-time employment of five officers, as well as limited time by a number of others. As the issue of the permits is a Commonwealth function, the Victorian Railways Commissioners contend that it should be paid for by the Commonwealth. They undertook to act for the board on the understanding that it would accept a debit for the cost, but subsequently were asked to bear the expenditure involved, and eventually were given a formal Direction which had that effect. Representations which were made by the State Government of Victoria failed to induce the Common-

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wealth Government to accept any debit for this expenditure.

Later, a request was made by the board that the Victorian Railways authorities should also undertake the issue of permits for travel by a road service operating on the Murray Valley Highway, but, after a trial period which made it apparent that the work interfered unduly with the duties of the limited station staff at Mildura, other arrangements were made by the board for the issue of permits for this and for the Mildura—Broken Hill road service. The permit system has eliminated a substantial volume of interstate travel for pleasure, interchange of visits, etc., which cannot be regarded as essential. The Victorian Railways authorities considered, however, that there should be some relaxation of the conditions governing civilian travel, whenever it is obvious that seats will be available. Authority of this description was given with respect to travel to Adelaide, and since the close of the financial year has been given with respect to travel to Sydney also. As was to be expected, the imposition of the permit restrictions led to some attempts to defeat the system by not booking through to the interstate destination or by pursuing other than the normal route. To limit the possibilities of such illicit travel the board, by Order No. 10 issued on November 13, 1942, prohibited the booking of passengers from stations designated as border stations, except on certain conditions involving the production of an identity card.

Slovak Railway Developments

The new 32-mile standard-gauge railway line between Kapusany pri Presova and Strazske, in north-eastern Slovakia, was opened to traffic towards the end of November last. It is stated to have cost Kronen 416,000,000 to build. (See also our January 28 issue, page 93).

According to official statistics recently issued in Bratislava the route length of the Slovak railway system is now 2,600 km. (1,615 miles); 1,302 miles are single track, 273 miles double track, and 40 miles narrow gauge. There are only three narrow-gauge lines: Polhora-Tisovec (11 miles), to the east of Zvolen; Ruzomberok-Korytnica (15 miles), a branch line to the north of Zvolen; and Dubrava-Banska Stiavnica (14 miles), to the west of Zvolen. The last named is now being converted to standard gauge, as recorded in our January 28 issue, page 93.

Transport in Manchuria

In Manchuria the two instruments of Japanese exploitation are the South Manchuria Railway Company and the Manchurian Heavy Industry Company. Before the Manchurian "incident" of 1931 the South Manchuria Railway Company was engaged in the development of railway, mining, industrial, and harbour enterprises in the three north-eastern Provinces of China. Since 1937, when the Manchurian Heavy Industry Company was established, the Japanese railway company has been engaged in railway, mining, and economic investigation not only in Manchuria but also in North China.

It may be recalled that the South Manchuria Railway Company was founded in 1906, two years after Japan defeated Czarist Russia and took over the railway enterprise of the latter in southern Manchuria. Two years after the Japanese invasion of Manchuria in 1931, the South Manchuria Railway Company gained control of all railways in territories under the rule of the puppet State of Manchukuo and began the construction of new lines. Before the establishment of the Manchurian Heavy Industry Company, the South Manchuria Railway Company invested in chemical, navigation, electrical engineering, transport, and civil engineering enterprises in the north-east, in addition to railway business.

The South Manchuria Railway Company now controls the South Manchuria Railway, the State Railways of Manchukuo, and the North Korean Railway. It also handles highway transport, harbour construction, warehouse management, and other related businesses. The largest mining enterprise the South Manchuria Railway Company manages is the Fushun coal mine with a deposit of one thousand million tons. Among other coal mines the company controls is the Chefoo coal mine with a deposit of twenty million tons. The company's coal mines produce about ten million tons of coal a year. Petroleum is also being extracted.

The North China Railway

The North China Railway Company is the largest subsidiary of the Japanese-controlled North China Development Company, which controls altogether 31 associated concerns. It owns and operates a railway system with a route length of 6,023 km. (3,739 miles) of which 1,028 km. (639 miles) are stated to have been built in the past four years. The Peking-Paotow railway, crossing Inner Mongolia, is one of the company's main lines. In addition to its railway system, the company operates a bus system totalling a route length of 7,300 km. (4,533 miles), and all important harbours in northern China, inclusive of Tientsin and Tang-ku. The company employs 110,000 Chinese and 40,000 Japanese and is said to be the largest "joint Sino-Japanese" enterprise in existence. Earlier details were given in our issue of September 24, 1943 (page 313), based on a Japanese broadcast, which gave a very much higher figure for the total route mileage of bus services. As the discrepancy is exactly 10,000 km., an error in transcription is suggested. We understand that the figure of 7,300 km. given above is probably the correct one.

Spanish Motor Traffic

The recent drastic cuts in Spanish motor traffic, recorded in our February 11 issue, page 146, lend interest to the official announcement from Spanish sources there were in all 397,032 registered motor vehicles in Spain at the end of 1942. This total was increased by 3,449 in the first half of 1943; additions in the whole of the years 1942 and 1941 were 6,371 and 4,076 respectively. The following are the totals of motor vehicles on the roads in the most important of the Spanish provinces at the beginning of 1943:—

Barcelona	...	72,023	Guipuzcoa	...	11,854
Madrid ...	...	68,648	Oviedo ...	...	10,538
Seville ...	...	19,315	Murcia ...	...	9,826
Valencia	...	17,260	Zaragoza	...	7,695
Vizcaya	...	14,574	Alicante	...	7,652

One of the first results of the American oil embargo recently imposed on Spain, was that motor traffic in Madrid was so curtailed that only 2,000 motor vehicles have been left on the roads, instead of the 40,000 vehicles previously at work in the streets of the Spanish capital.

Bus Service on Inter-American Highway

Press reports from Nicaragua give further details of the new international bus service along the line of the newly-completed Inter-American Highway, part of the Pan-American Highway system, to which we made reference last week (page 346). Buses carrying passengers and express run from Managua (the capital of Nicaragua), through Honduras, Salvador, and Guatemala, and across the Guatemala-Mexican border to the Mexican town of Tapachula, about 10 miles beyond the Talisman Bridge which marks the boundary between these two republics. This new motor transport service therefore unites five republics and touches three national capitals—Managua, San Salvador, and Guatemala City. The 735-mile route is reported to be in excellent condition, with the exception of one short stretch linking Nicaragua and Honduras, and even that section is passable. The recent completion of the highway bridge across the river between Salvador and Honduras has made this through service possible.

American Road on Canal Bed

The 100-year old Miami-Erie Canal, which was abandoned some time ago, has now been converted into an access road to an aeroplane engine factory. *Engineering & Contract Record* states that clearance of the route entailed the removal of three old locks, which had been built of stone masonry on hewn timber grillage before the American Civil War. The contractors built gravity type retaining walls from 6 ft. to 32 ft. high along the low road bed. The finished project includes over 2 miles of four-lane dual concrete pavement.

American Hospital Train

The first overseas hospital train for the American Army, built by the Pullman-Standard Car Company at its Worcester Works, Massachusetts, was completed at the end of November last. Of somewhat Spartan external appearance, more resembling bogie wagons with centre doors and small side windows than standard American passenger stock, the new train is nevertheless substantially built, and very thoroughly equipped with its own electric power plant, steam-heating apparatus, and an emergency operating room. The train consists of ten cars—six ward cars accommodating 96 patients, a kitchen car, a utilities car, and two living cars for the personnel, which will comprise four doctors, six Army nurses, and 33 specialists from among enlisted men. The cars have been designed to pass standard European clearances, and the complete train has cost $135,000.

A "Safety Ace" in the U.S.A.

The National Safety Council of the United States has presented an award to the Illinois Central System for showing a greater reduction in the ratio of casualties to employees during 1943, as compared with 1942, than any other American railway system. The number of Illinois Central casualties, to every million man-hours worked during the year, fell from 9·18 in 1942 to 6·88 in 1943, and this despite increases in the number of employees at work, in the hours worked per man, and in the volume of traffic handled. At the formal presentation, the award was received for the railway by Stanley E. Le Grande, a millman at the Illinois Central shops in Mattoon, Illinois, who was designated a "safety ace" by the Council. At the presentation emphasis was laid on the remarkable fact that, whereas in the first world war the casualties to employees on American railways in 1917 and 1918 totalled 7,000, in 1942 and 1943 the number had dropped to no more than 2,000. The record in the present war is the more noteworthy in view of the fact that, apart from the unprecedented increase in traffic, there has been a greater loss of trained men by reason of enlistment, and a larger number of substitute workers has had to be trained, therefore, in railway safety methods.

Map showing the railways (and gauges) of Norway and Sweden. ***Under German*** *occupation, most of the Norwegian narrow-gauge railways have been converted to standard gauge.* ***Norway was*** *invaded four years ago, on April 9, 1940*

Associated Electrical Industries Limited
Annual Meeting

The annual general meeting of Associated Electrical Industries Limited was held at Crown House, Aldwych, London, W.C.2, on Friday, March 31. Sir Felix J. C. Pole, Chairman of the Company, presided. The Secretary (Mr. R. H. Haviland, A.C.A.) having read the notice convening the meeting and the auditor's report,

The Chairman said: Since our last meeting we have lost by death two of our directors, Sir William Guy Granet and Mr. W. C. Lusk. Sir Guy Granet had been a director since its formation. He was a man of great force of character and ability and was an extremely valuable member of the board. Mr. Lusk had been a director since its inception and Managing Director since November, 1932. He had great experience in the electrical industry, both in this country and abroad, and his outstanding ability was devoted to the furtherance of the interests of the A.E.I. group of companies.

Later you will be asked to confirm the appointment of Mr. Dalziel as a director, and I may say now that his great financial experience in the City has already proved to be most valuable to us.

The board has decided not to appoint a Managing Director, but they have appointed three of our whole-time Directors, Sir George Bailey, Mr. H. N. Sporborg and Mr. P. S. Turner, Vice-Chairmen of this company and members of the Executive Management Committee.

Your directors have pleasure in laying before you their report and the statement of accounts for last year, and I feel sure the proprietors will have noted with pleasure the strength of the balance sheet, and particularly of the consolidated balance sheet. The profit for the year was £695,266, after making full provision at current rates for all taxation payable in respect of the profits earned up to December 31, 1943. This compares with £686,527 for the previous year, an increase of £8,739. After charging £235,295 against £233,707 for depreciation of plant, etc., the net profit was £459,971, an increase of £7,151. To the net profit of £459,971 has to be added £289,736, the balance brought forward from the previous year, making a total to be dealt with of £749,707.

In regard to the provision for depreciation the accounts relate mainly to the Metropolitan-Vickers Electrical Company, and the provision of £235,295 for depreciation is in respect of that company. Depreciation provided by all the companies in the associated group (including the British Thomson-Houston Company's liberal provision) totalled £540,866. In 1942 we set aside to a reserve for contingencies the sum of £150,000, to meet any unforeseen demands on our resources after the war. In the accounts this amount of £150,000 has been transferred to the special reserve account, which stood at £200,000 in 1942, making a total of £350,000. Your directors felt that this account should be increased by a further appropriation from profits of £150,000, making the special reserve account £500,000.

After providing for dividends on preference stock £52,306, there remains £547,401, and your directors recommend a dividend on the ordinary stock of 10 per cent. per annum, less tax, leaving a balance to be carried forward of £301,309 as compared with £289,736 brought in from the previous year. If this recommendation is approved we shall have paid a 10 per cent. dividend for eight consecutive years.

If you will now refer to the balance sheet, you will see that creditors, accrued charges, and reserves for contingencies, £9,095,724 (and amounts owing to subsidiary companies £306,862) total £9,402,586, an increase of £1,565,558. On the assets side of the balance sheet, shareholdings and debentures in subsidiary companies and investments in other than British Government securities total £4,125,634, a decrease of £24,169. The stocks and materials on hand, debtors, etc., amounting to £12,657,198, show an increase of £1,736,857. Cash and British Government securities including Tax Reserve Certificates at £931,034, show an increase of £135,823.

As usual, we have published a consolidated balance sheet showing the position of the associated group of companies as a single unit. I would again direct your attention to the strength of the group as demonstrated by the reserves and profit and loss accounts, which items have increased by £348,710 to £4,776,464, a total which represents 97 per cent. of our ordinary capital.

Circumstances still prevent me from giving any details of the company's activities, but I may tell you that we have again had a record year from the point of view of physical output and value of sales invoiced.

Both our principal companies came into the defence programme as early as 1937; and the volume of Government work has risen in an ever-increasing tide. All departments and sections of the organisation have made a major contribution to the demands of the war, and the research and engineering departments especially have been responsible for the discovery and improvement of specialised devices of great national—indeed, international—value. The planning of manufacturing programmes to secure manufacturing efficiency, and the various commercial and accounting problems have necessarily imposed a great strain upon the departments responsible for those sections of our business.

Your directors have been gratified that the company's efforts have been recognised by the award of honours to several of our employees, and in particular I would refer to the honour of knighthood conferred by His Majesty the King on Sir George Bailey. We have also been gratified to receive expressions of appreciation of our efforts from the Prime Minister and from various members of H.M. Services and from departments of the Government.

On former occasions I have told you that your company has always been most progressive in dealing with its employees. For the last 26 years we have had works, staff, and suggestions committees. The effect of this has been that, in spite of the great strain which the war has imposed on all our employees, another year has passed harmoniously without labour disputes arising. On our side we have maintained welfare, benevolent, and thrift organisations, and have done all we can to merit our wish to be regarded as good employers. The company has continued to encourage its employees to maintain their contributions to the national savings movement, and the payments to employees who have joined H.M. Forces have been continued and have increased as more of our staff have joined the Forces. These arrangements we feel sure have been helpful, and are appreciated by the recipients. The policy actively pursued by your company for many years of providing for the education and training of apprentices has been maintained. We also have facilities for training war workers. In addition we are training Indian artisans under the Bevan scheme, as well as craftsmen for the Services. We have also released a large number of apprentices for whole-time intensive training courses under the Hankey scheme.

Since the outbreak of war 3,689 employees of the Metropolitan-Vickers Company have joined the Services. The loss of so many skilled and experienced manual and staff personnel, and their replacement by others has been a difficult task. Of the total number of employees in our works, about 40 per cent. are women, and many of them have become quite adept, and all of them are rendering meritorious service.

On this occasion I do not propose to refer to post-war problems, beyond saying that they are receiving most careful attention. I should, however, like to make special reference to export business, which has been seriously curtailed by the war. In that connection I would like to endorse Lord Wardington's speech at the annual meeting of Lloyds Bank, when he said:—

"Of all the tasks before us none is more important than the re-establishment of our export trade. Without it we can neither eat nor work. Both food and raw material are essential for our livelihood, whether we are engaged in production for our home or foreign consumption, but without an adequate export trade we shall be unable to pay for the food and raw materials required for both. It is idle, therefore, to suppose that we can exist on home markets alone. Our means of payment for necessary imports have been largely curtailed during the war."

Your Companies have always devoted a very large proportion of their technical and manufacturing facilities to export trade. We maintain a large and efficient organisation overseas, and, when the time comes, as we hope it soon will come, we shall be ready to play our part in meeting the requirements of our valued customers outside this country.

I have already referred to the good work of all grades of our workpeople, men and women, and of our executive directors, officers of all ranks and grades, and I would ask you to accord them an expression of your hearty thanks, which will be most cordially endorsed by the Board of Directors.

The chairman then moved, and Mr. P. S. Turner seconded the resolution, which was carried unanimously. On the chairman's motion, seconded by Sir John Chancellor, Mr. Charles L. Daziel was confirmed as a director. The chairman then moved and the Earl of Verulom seconded the re-election as directors of Sir John Chancellor, Group Captain Sir Louis Greig, Mr. Cyril E. Lloyd and Mr. Percy S. Turner, which was carried unanimously. The auditors were re-elected.

Observer Commander Binyon moved a vote of thanks to the Chairman. He expressed the congratulations of shareholders to Sir George Bailey, and their sympathy with the board and relatives on the death of Sir Guy Granet and Mr. W. C. Lusk. He also paid tribute to the work of the staff.

Sir Felix Pole having suitably responded, the proceedings terminated.

British Automatic Co. Ltd. Annual Meeting

The annual general meeting of the British Automatic Co. Ltd. was held on April 5 at Winchester House, London, E.C.2. Major R. D. K. Curling, M.C., Chairman of the company, presided.

The Chairman said: Major Dodge is still, unfortunately, a prisoner of war, but, as far as we know, he is quite well. Soon after the outbreak of war he was given leave of absence from board meetings, by his colleagues, so that he might rejoin the Army for active service. This he did, but was taken prisoner in France in 1940. As you are aware, in accordance with our articles of association he retires from the board at this meeting, but so that we may have the benefit of his advice and assistance at future board meetings when he returns to this country, I am going to ask you later in the proceedings to re-elect him a director of the company.

Following the usual custom, I presume you will agree to the directors' report and accounts being taken as read.

I will now read the statement which I issued, with the report and accounts, for the benefit of those shareholders who are unable to be present at this meeting:—

This is the first occasion on which a consolidated balance sheet of the company and its subsidiaries has been issued for the information of the shareholders, and it shows a sound state of affairs.

During the war the book value of the fixed assets of the group has been reduced gradually by reason of the provision made for depreciation and obsolescence of automatic machines, premises, plant, etc., and unfortunately it has not been possible to make adequate capital replacements. Current assets, therefore, have considerably increased by the provision made from profits for the wastage of fixed assets, and this will provide the liquid resources necessary to purchase new automatic machines, etc., when it is again possible to do so after the war.

The accounts are quite clear, so I will deal only with those items on the balance sheet where there has been a considerable change during the year, and also with the profit and loss account.

Investments in subsidiaries show an increase of **£12,831** at **£321,300**, due to the release of part of a reserve previously deducted from this account in respect of past losses incurred and which has now been reduced by the profits earned during the year. Stocks at **£40,016** are down by **£8,321** on account of reduced sales through automatic machines. British Government securities, other investments, tax reserve certificates and cash on deposit at bankers and in hand at **£203,259** show an increase of **£11,675**.

On the liabilities side depreciation and renewals account has been increased by **£19,000** to **£260,000** after providing **£9,743** for machines which were scrapped during the year, from the allocation of **£28,743** from profit. Deferred maintenance of machines reserve has been increased by **£15,000** less income tax thereon **£7,500** to **£22,500**, as it is impossible to obtain labour and materials to maintain our machines, and provision, therefore, must be made for the increased expenditure which will be incurred after the war.

Turning to the profit and loss account, trading profit was down by **£10,861** to **£87,822**, after taking into account a substantial increase in the net profit of Reeves Limited, but the net profit is reduced only by **£680** to **£40,976**, due to reductions in war insurance, debenture interest, taxation and general expenses. The balance of profit brought forward from 1942 was **£4,775**, and this, added to the profit for the year, makes a total of **£45,751**, from which we have allocated **£28,743** to depreciation and renewals account, leaving a balance of **£17,008**, and from this we recommend the payment of a dividend of 6 per cent., less income tax at 10s., which will absorb **£12,000**, leaving **£5,008** to be carried forward.

The business of our chocolate manufacturing subsidiary in Glasgow—Reeves Limited—is making excellent progress, despite many restrictions and wartime controls. Very great credit is due to the Manager, Mr. A. H. Brace, for the results now being obtained.

Because of war conditions the only bright side of the automatic business is the increased receipts from weighing machines. Needless to say this is being exploited to the greatest possible extent.

I again take pleasure in referring to the very satisfactory relations which exist between the railway companies and ourselves and the friendly and helpful attitude of their officers in all their dealings with us, especially at this time when they are so fully occupied with the problems of war transport.

During the year Mr. W. J. Devenish was promoted to the position of Assistant General Manager and we should like to congratulate him heartily on the splendid way in which he has acquitted himself in his new position and also to express our appreciation of the efficient and loyal way in which the managers and staff have carried out their duties during the year.

I also wish to thank my colleagues on the board for having so ably assisted me during the very difficult year we have just completed.

The report and accounts were adopted.

Questions in Parliament

Station Name Boards

Wing-Commander N. J. Hulbert (Stockport—C.) on March 23 asked the Parliamentary Secretary to the Ministry of War Transport if he would now consider relaxing the regulations to permit signboards of normal size indicating railway sign names to be erected.

Mr. Noel-Baker in a written answer stated: As Wing-Commander Hulbert will understand, the size of railway signs is a matter about which I must be guided by the views of the Defence Departments. With their consent, considerable relaxations, in fact, have been made; they are now considering whether something further can be done.

London Passenger Transport Board

Sir Herbert Williams (South Croydon—C.) on March 29 asked the Parliamentary Secretary to the Ministry of War Transport why the London Passenger Transport Board was prohibited by him from publishing its working expenses.

Mr. Noel-Baker: I am advised that it would be contrary to the public interest to publish the working expenses of the London Passenger Transport Board.

Sir H. Williams: Is it not time that we now had some explanation as to why information cannot be published which cannot divulge any information to the enemy whatever?

Mr. Noel-Baker: I think Sir Herbert Williams makes a wrong assumption. I am assured by the competent authorities, whose advice I must accept, that it would divulge information of interest to the enemy.

Several Members cried "Why?"

Mr. E. Shinwell (Seaham—Lab.): What is all this mystery about? How is it possible, if the working expenses of this Board are published, that the information can possibly afford any comfort to the enemy? Which particular item could afford such comfort? If there is any particular item which has to be undisclosed, let it be undisclosed.

Mr. Noel-Baker: We cannot publish some items and not others. I will furnish to Members, if they desire it, the advice I have been given. In any case we cannot give Sir Herbert Williams the figures he desires, because there is no clearance with the main-line companies of working expenses. We could not get the figures out.

Sir H. Williams: Then why say it is on grounds of security when it is on grounds of accountancy?

Mr. Noel-Baker: It is on both grounds.

Major M. Petherick (Penryn & Falmouth—C.): Is the Parliamentary Secretary aware that the profits of the main line railways are published? Is there any reason, as that does not seem to help the enemy, why the accounts of the London Passenger Transport Board should not be published?

Mr. Noel-Baker: Not their working expenses.

Sir Oliver Simmonds (Birmingham, Duddesden—C.): Would the Parliamentary Secretary say whether the publication of this information would show the inefficiency of State control?

Mr. Noel-Baker: That consideration has nothing to do with it.

Mr. Shinwell: In view of the obvious feeling of the House, will the Parliamentary Secretary reconsider this matter, and come forward with a statement?

Mr. Noel-Baker: Yes, Sir, I will certainly reconsider it, and if Mr. Shinwell will put down a question I will make another statement.

Sir Herbert Williams (South Croydon—C.) on March 29 asked the Parliamentary Secretary to the Ministry of War Transport if he would state the names and the qualifications of the Appointing Trustees under the London Passenger Transport Act.

Mr. Noel-Baker: I will circulate the information Sir Herbert Williams desires.

Later Mr. Noel-Baker circulated the following information:—

It is provided by Section 1 (1) of the London Passenger Transport Act, 1933, that the Appointing Trustees shall consist of the following persons: The Chairman of the London County Council; a representative of the London & Home Counties Traffic Advisory Committee; the Chairman of the Committee of London Clearing Bankers; the President of the Law Society; the President of the Institute of Chartered Accountants in England & Wales; in the case of appointments to fill vacancies in the Board at any time after the first constitution of the Board, the Chairman of the Board, or some other member of the Board nominated by the Board for the purpose.

The Trustees for the time being are: Mr. Somerville Hastings, M.S., F.R.C.S.—Chairman of the London County Council;

Sir Harry Vanderpant—London & Home Counties Traffic Advisory Committee; Mr. Colin F. Campbell, J.P.—Chairman of the Committee of the London Clearing Bankers; Mr. Ernest Bird—President of the Law Society; Mr. C. J. G. Palmour, F.C.A.—President of the Institute of Chartered Accountants; Lord Ashfield—Chairman of the Board.

Flight-Lieutenant W. R. D. Perkins (Stroud—C.) on March 29 asked the Parliamentary Secretary to the Ministry of War Transport, whether, having regard to the fact that the London Passenger Transport Board had, for ten consecutive years, failed to meet its obligations in respect of the "C" Stock, he was prepared to introduce amending legislation.

Mr. Noel-Baker wrote in reply: No, Sir.

Mr. T. Levy (Elland—C.) on March 29 asked the Parliamentary Secretary to the Ministry of War Transport if he would state the remuneration of each of the members of the London Passenger Transport Board.

Mr. Noel-Baker stated in a written answer: Following is the information:—

	Salary £
Chairman—	
Lord Ashfield	12,500
*Full-time Member—	
Mr. John Cliff	3,000
Part-time Members—	
Lt.-Colonel C. G. Vickers	750
Mr. Ashley Cooper	750
Lord Latham	750
Mr. Geoffrey Heyworth	750
Sir Gilfrid Craig	750

* Salary at the rate of £3,000 per annum is payable to Mr. Cliff so long as he is required to take executive charge of staff and staff welfare; it is, however, subject to review on any change in circumstances.

Parliamentary Notes

L.M.S.R. Bills

Lord Stanmore (Chairman of Committees) in the House of Lords, on March 29, moved that Standing Order No. 105 be considered in order to its being dispensed with in connection with the London Midland & Scottish Railway (Canals) Bill and the London Midland & Scottish Railway Bill. He said that these Bills had not been read a second time within the time limited by Standing Order No. 105, because of the lateness of the date on which the Wharncliffe meeting of the company was held. The railway company had over £300,000,000 of capital carrying voting rights, and the calling of a special meeting of proprietors involved not only an expenditure of more than £1,000 in postage and the cost of printing and advertising, but the labour involved in the preparing and dispatching of the enormous numbers of notices. For that reason the company sent out the notices calling the Wharncliffe meeting at the same time as the notices calling the annual general meeting. The notices of the Wharncliffe meeting to consider these Bills were dispatched on or before February 24, and the meeting was held on March 20. There was no reason why the Bills should not be read a second time, and therefore he moved that the Standing Order be considered in order to its being dispensed with.

The motion was agreed to, and the Bills were read the second time and committed to a committee.

The committee will be proposed by the Committee of Selection.

TRANS-CANADA AIR LINES.—Passengers, mail, and express carried by Trans-Canada Air Lines in 1943 showed marked increases over the figures for 1942. The number of passengers carried in 1943 was 142,001, an increase of 28·9 per cent. Air mail carried, at 3,726,607 lb., showed an increase of 60·11 per cent.; and air express, at 821,605 lb., an increase of 126 per cent.

Notes and News

German-Swiss Trade.—The trade agreement between Germany and Switzerland, which expired at the end of February, has not been renewed.

Increased Frequency of Railway Accidents in Spain.—According to a recent announcement from Spanish official sources, the increased frequency of railway accidents in Spain was the object discussed at one of the recent Councils of Ministers at Madrid. On the recommendation of the Minister for Public Works, further investigation was ordered, and severe disciplinary and penal action will be taken against those found responsible.

Permanent Way Institution. — By courtesy of Mr. W. K. Wallace, Chief Civil Engineer, and Mr. T. W. Royle, Chief Operating Manager, L.M.S.R., and by arrangement with Mr. W. H. Gyles, District Engineer, Liverpool, L.M.S.R., members of the Manchester & Liverpool Section of the Permanent Way Institution will be able to visit the District Engineer's Workshops, Edge Hill, and the Gridiron, Edge Hill, on April 15. Members should assemble at the large gates of the Edge Hill Shops in Combermere Street at 2.30 p.m. Attention is drawn to the change of date from that originally announced.

Broom & Wade Limited.—Trading profit for the year ended September 30, 1943, was £237,533 (£214,839). After deducting £20,305 (£20,006) for depreciation and £161,772 (£166,023) income tax, E.P.T., and/or provision for rebates to H.M. Departments there is a net available profit of £55,455, from which £32,879 is set aside for deferred repairs. The amount brought in was £31,467. Dividends on the ordinary shares total 22½ per cent. (same) and the amount to be carried forward is £33,718. The creation of 440,000 new ordinary shares of 5s. each was sanctioned by the shareholders on December 31, 1942, but so far it has not been found necessary to issue any of these new shares.

Shorter Working Week Proposal.—The General Council of the Trades Union Congress proposes to make a 40-hour working week, without reduction of wage rates, a principal aim of its post-war policy, and to ask the Government to introduce an enabling bill to empower industries, by agreement between the organised employers and employees to establish the shorter week, which would then be obligatory on all undertakings in the industry. It is suggested also, that in certain cases where joint negotiating machinery is inadequate, the initiative should rest elsewhere. Before suggesting the lines of the proposed legislation, the General Council has decided to call for the considered views of the unions on the method of applying the shorter week in their particular industries.

New L.M.S.R. Belfast Offices.—The new city offices of the L.M.S.R. at 24, Donegall Place, Belfast, which were opened to the public on Monday, March 27, are spacious and modern. They have replaced the old office at 11, Donegall Place, where accommodation had been inadequate in recent years for the volume of business transacted. In the new building the passenger booking and enquiry office is on the ground floor, and accommodation for the public includes comfortable seating for air-service passengers, waiting to travel by bus to the air-port. Tickets may be obtained for rail and steamer services, and reservations made for air travel. On the first floor are the new headquarters of the Steamship & Commercial Superintendent, Northern Counties Committee, L.M.S.R. The alterations and decorations have been most satisfactorily effected with the use of a very small quantity of new material.

Madras General Omnibus Co. Ltd.—A general meeting of members of this company—now in voluntary liquidation—will be held at the offices of Messrs. Hays, Akers & Hays, No. 1, Queen Victoria Street, London, E.C.4, on Monday, April 24, at noon, to receive the account of the liquidator showing how the winding-up has been

British and Irish Railway Stocks and Shares

Stocks	Highest 1943	Lowest 1943	Prices April 4, 1944	Rise/Fall
G.W.R.				
Cons. Ord.	65¼	57¼	59	– ¼
5% Con. Pref. ...	120½	108	11 €	—
5% Red. Pref. (1950)	110½	106	108	—
5% Rt. Charge ...	137½	123½	129½	—
5% Cons. Guar. ...	135¼	121⅞	127½	—
4% Deb.	118	107½	113	—
4½% Deb.	119	109⅞	114½	—
4½% Deb.	124½	116	120½	– 1
5% Deb.	138	127	131½	—
2½% Deb.	77	72½	74½	—
L.M.S.R.				
Ord.	34⅛	28	30½	– ½
4% Pref. (1923) ...	66½	58	59	– ½
4% Pref.	80½	73	76½	—
5% Red. Pref. (1955)	105¾	102	104½	—
4% Guar.	107	98½	101½	—
4% Deb.	109¾	103½	105½	– ½
5% Red. Deb. (1952)	111½	108	109½	—
L.N.E.R.				
5% Pref. Ord. ...	12⅞	7⅞	9	—
Def. Ord.	5⅜	3⅜	4½	—
4% First Pref. ...	66½	57½	59½	– ½
4% Second Pref. ...	36½	30½	32½	—
5% Red. Pref. (1955)	99¾	93	100½	—
4% First Guar. ...	102¾	94	98	—
4% Second Guar. ...	93½	85¾	89½	– ½
3% Deb.	86¾	78¾	81½	—
4% Deb.	109⅞	101¾	104½	– ½
5% Red. Deb. (1947)	106¾	102	103⅝	– 1
4½% Sinking Fund Red. Deb.	108	103½	104½	—
SOUTHERN				
Pref. Ord.	80	72½	76	—
Def. Ord.	26½	20⅞	24½	– ½
5% Pref.	119½	106¾	114½	—
5% Red. Pref. (1964)	114	108½	113½	—
5% Guar. Pref. ...	136	122	126½	– 2
5% Red. Guar. Pref. (1957)	117	109½	113½	—
4% Deb.	117½	106	111	—
5% Deb.	137	126	130½	—
4% Red. Deb. (1962-67)	112	106½	109½	—
4% Red. Deb. (1970-80)	112	107	110½	
FORTH BRIDGE				
4% Deb.	109	104½	105	—
4% Guar.	105	102½	103½	—
L.P.T.B.				
4½% "A"	125½	114	121½	—
5% "A"	133⅛	123	130½	—
3% Guar. (1967-72)	100½	97	99	—
5% "B"	124	114	119½	—
"C"	72	53	70	—
MERSEY				
Ord.	34½	27	33½	—
3% Perp. Pref. ...	68	59½	69	—
4% Perp. Deb. ...	104	102½	103	—
3% Perp. Deb. ...	83	78½	79	—
IRELAND				
BELFAST & C.D.				
Ord.	9	6	6½	—
G. NORTHERN				
Ord.	24½	16	20¾	—
Pref.	—	—	38½	— 1⅛
Guar.	—	—	62	+ 1
Deb.	—	—	86	+ 1½
G. SOUTHERN				
Ord.	30	9½	51	— 1
Pref.	30	11	50½	— 1½
Guar.	64	26½	67½	— ¾
Deb.	88½	51½	91	+ 1

§ ex-dividend

"OUR RAILWAY HISTORY": vivid account of pre-grouping companies: exceptional illustrations. Supplements other locomotive books and articles. First of three attractive books ready early April. 3s., post free 3s. 3d.—Bucknall, 71, Witley Court, Woburn Place, London, W.C.1.

OFFICIAL NOTICES

Belfast and County Down Railway

THE Directors of the Belfast and County Down Railway Company are prepared to receive applications for the position of Traffic Manager. Applicants must have up-to-date traffic management experience and will have to take up duty by end of July.

Full particulars of experience and age, with copies of three recent testimonials, together with Salary expected to be sent to the Chairman of Directors, Belfast and County Down Railway Company, Belfast, Northern Ireland.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

conducted and its property disposed of; and to pass an extraordinary resolution as to the disposal of the books, accounts, and documents of the company.

Braithwaite Patent Restored.—An Order made by the Patent Office, dated March 16, 1944, has restored Patent No. 386,548 granted to Braithwaite & Co. Engineers Ltd. for metal stamping and like tools.

Fire in Train near Calcutta.—Twenty passengers were injured on March 5 when they jumped from a train between Bogoola and Arangha Stations, Bengal & Assam Railway, in the neighbourhood of Calcutta, in an attempt to escape a fire which had broken out in one of the third class coaches. The train concerned was the down Dacca Mail.

Vickers Limited.—At a meeting of the board held on March 16, it was decided to recommend for approval at the annual general meeting to be held on April 4, 1944, a final dividend on the ordinary stock of 6 per cent. actual, less income tax, making 10 per cent. for the year ended December 31, 1943. Net profit for the year, after providing for taxation, is £984,119, against £962,600 in 1942. The transfer to contingencies is £250,000 (£250,000 in 1942) and the carry forward £897,627 (£783,447 in 1942).

Hull Corporation as L.N.E.R. Stockholder.—The Finance Committee of the Hull Corporation passed a resolution on March 28 recommending the City Council to become a subscribing member of the L.N.E.R. Stockholders' Association in support of its efforts to obtain a revision of the terms of the Railway Control Agreement. The Corporation holds £100,000 of L.N.E.R. 4 per cent. second preference stock, which was allotted on grouping to represent the holding of the Corporation in the former Hull & Barnsley Railway Company.

Clayton Dewandre Co. Ltd.—In the report for the year 1943 it is stated that the trading profit was £85,339 (£81,401), and the net profit, after deducting directors' fees, depreciation £19,971 (£19,563), and provision for income tax £22,350 (same) was £42,322 (£39,126). Adding £13,582 brought in makes £55,904. The sum of £7,500 is again allocated to general reserve and £6,552 (nil) is written off patents. The final dividend of 6 per cent. makes 10 per cent. for the year (same), and £14,522 is carried forward.

Taltal Railway Position.—It is announced by the Taltal Railway Co. Ltd. that advice has been received from Chile of an intimation by the Chilean Government that production of nitrate in the Taltal Pampa will shortly cease. The directors and their representatives abroad are closely considering the best means of dealing with the situation thus created. As the principal source of revenue is the traffic provided by the nitrate industry the position is bound to be serious. In the year ended June 30, 1943, 44,697 tons of nitrate were transported from the district served by the company. The amount produced in the previous year was 70,610 tons and the amount transported was 82,480 tons.

Metropolitan Assented Stock.—Interest for the year ended December 31, 1943, is payable at the rate of 3½ per cent less tax (same), and warrants were posted on April 6.

South African Railways Earnings.—During the period from February 6 to March 11 inclusive, earnings of the South African Railways amounted to £4,290,458, compared with £4,136,694 for the corresponding period of 1943.

Kitchen & Wade Limited.—Net trading profit for the year to March 31, 1943, was £118,610, and the subsidiary company (Ormerod Shapers Limited) earned £18,189, making a total of £136,799. Deducting £108,623 for price repayments, income tax, and E.P.T. leaves £28,176, making, with £4,423 brought forward, £32,599. The dividend distribution for the year is 25 per cent. and a cash bonus of 5 per cent. is also paid. A sum of £5,000 is placed to reserve account, and £5,099 is carried forward.

Swedish Railway Amalgamation Proposal.—The Swedish Government recently submitted to the Riksdag proposals for the purchase by, and amalgamation with, the State Railways of the privately-owned Stockholm - Västerås - Bergslagen Railways. It is intended that the amalgamation with the State Railways should take place on July 1, 1945. It may be recalled that previous negotiations for amalgamation broke down two years ago, due to inability to reach an agreement as to purchase price.

Organisation of a Research Department.—A meeting of members of the Institute of Fuel will be held at the Institution of Mechanical Engineers, Storey's Gate, Westminster, S.W.1, on April 20 at 2.30 p.m., when Dr. A. Parker, D.Sc., F.I.C., M.I.Chem.E., Director of Fuel Research, Department of Scientific & Industrial Research, will present a paper entitled "The Organisation of a Research Department," after which there will be a discussion. Brigadier-General Sir Harold Hartley, K.C.V.O., C.B.E., M.C., F.R.S., will be in the chair.

Great Southern Railways Redeemable Debenture Stock.—Holders of the 4 per cent. redeemable (1947) debenture stock of the Great Southern Railways Company are asked to accept, not later than April 25 next, an offer for the redemption of their holdings at 102 per cent. on June 30, 1944. Interest to the date of redemption will be included in the repayment. An amount of £637,892 4 per cent. redeemable (1942) debenture stock fell due for redemption on March 31, 1942. The holders of this stock were given the option of redemption in cash or the re-issue to them of the whole or part of their holdings at the same rate of interest, the re-issued stock to be redeemable at par on March 31, 1947. Under that arrangement £344,931 debenture stock was re-issued and £292,961 repaid to the holders. The amount now outstanding is £344,931.

Contracts and Tenders

Orders recently carried out by, or placed with, the Canadian Car & Foundry Co. Ltd. include :—

For Newfoundland Railway: 127 goods, and 26 passenger, vehicles constructed.

For South African Railways: 1,000 open high-side steel bogie wagons constructed, and 1,000 more ordered.

For Canadian Pacific Railway: 1,000 box wagons and 100 hopper wagons ordered.

The Canadian Pacific Railway has placed an order for 25 goods locomotives with the Montreal Locomotive Works Limited.

Below is given a list of orders placed recently by the Egyptian State Railways:—

Hoffmann Manufacturing Co. Ltd.: Ball bearings.

Alley & MacLellan Limited: Spares for air compressor.

The J. G. Brill Company: Springs.

United States Steel Export Company: Screw-spikes.

Haggerty Lawrence & Company: Welding materials.

British Insulated Cables Limited: Wire.

Thomas Turton & Sons Ltd.: Bars.

Arthur Balfour & Co. Ltd.: Cast steel.

Atlas Diesel Co. Ltd.: Spares for Atlas corner drills pneumatic type.

Thos. Firth & John Brown Limited: Wire spring-steel.

Forthcoming Events

April 12 (*Wed.*).—Institute of Welding, at the Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, 6 p.m. "Factors controlling the weldability of steel," by Dr. L. Reeve.

April 15 (*Sat.*).—Metropolitan Graduate & Student Society, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, 2.15 p.m. "World communications," by A. G. Course.

April 15 (*Sat.*).—Permanent Way Institution (Manchester & Liverpool Section) assembling at the large gates of the Edge Hill Shops of the L.M.S.R. in Combermere Street, Liverpool, at 2.30 p.m. for visit to the District Engineer's Workshops and the Gridiron, Edge Hill.

April 20 (*Thurs.*).—Institute of Fuel, at the Institution of Mechanical Engineers, Storey's Gate, Westminster, London, S.W.1, 2.30 p.m. "The organisation of a research department" by Dr. A. Parker.

April 28 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, 5.30 p.m. "The application of fabricated construction to machine design," by F. Koenigsberger. General meeting.

May 2 (*Tues.*).—Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, 5.30 p.m. "The strength of cast-iron girder bridges," by C. S. Chettoe, and Norman Davey. Ordinary Meeting.

Railway Stock Market

Business in Stock Exchange markets again has been on a moderate scale, although the general tendency in security values was steady under the lead of British Funds. Holiday factors and the forthcoming Budget have been additional restrictive influences on markets apart from the widespread tendency to await war developments. With the continuance of inactive conditions there has been little scope for the return of a firmer trend in home railway stocks. Junior stocks have been inclined to show fractional declines in the absence of improvement in demand, but when markets become more active it would seem that the generous yields will attract a good deal more attention. Prior charges have recorded further small declines where changed, and have not reflected the firm undertone which has been maintained in British Funds. Nevertheless, investment merits and yield considerations can be expected to attract increased attention to the prior charges in due course. Great Western 4 per cent. debentures now yield over 3½ per cent., as does London Transport 4½ per cent. "A" stock. Moreover, Southern 4 per cent. debentures return nearly 3⅝ per cent., L.M.S.R. 4 per cent. debentures nearly 3¾ per cent., and L.N.E.R. 3 per cent. debentures not far short of the latter rate. Great Western 4 per cent. debentures at their current level are 4½ points below the highest level recorded last year. The corresponding decline in London Transport 4½ per cent. "A" stock is 4⅛, and that in Southern 4 per cent. debentures 6½ points. L.M.S.R. 4 per cent. debentures are 4¼ points below last year's highest, and L.N.E.R. 3 per cent. debentures show a corresponding decline of 5⅜.

Sentiment as to home railway junior stocks has been affected to some extent by the question of rising costs of wages and materials and the problems that will result in connection with railway charges if these higher costs persist after the war. In varying degrees similar problems will have to be faced by many other industries after the war, but considerations of this kind do not appear to have any influence on shares of industrial companies generally. The reason why there is a disposition in the market to emphasise the post-war problems that will have to be solved by the railways may possibly turn in a large measure on the fact that on so many occasions in the past the reasonable hopes of stockholders have been disappointed. Nevertheless, with yields of 8 per cent. and over ruling on home railway junior stocks it would certainly seem that post-war factors are more than discounted by current prices, and given a return of active markets, prior charges as well as the junior stocks should have reasonable scope for making better prices.

Compared with a week ago, Great Western ordinary was unchanged at 59, having regained an earlier small decline. The 4 per cent. debentures were maintained at 113½, but the 5 per cent. preference at 116 lost half-a-point, and the guaranteed stock was a point lower at 126½. L.M.S.R. ordinary eased from 30⅞ to 30½, the senior preference from 76½ to 76, and the 1923 preference from 59½ to 59. Moreover, L.M.S.R. guaranteed went back half-a-point to 101, and the 4 per cent. debentures from 106 to 105½. Among L.N.E.R. stocks, the second preference was 32, as against 32¼ a week ago, the first preference 59¼, against 59⅜; the first guaranteed eased from 98 to 97½, the second guaranteed from 90 to 89½, and the 3 per cent. debentures were 81. Southern deferred eased from 24⅜ to 24⅛; but the preferred strengthened from 75⅛ to 76, although the 5 per cent. preference lost a point at 114. London Transport "C" was slightly better at 71, but fractional declines were shown in the "A" and "B" stocks.

A better tendency ruled in Argentine railway securities. B.A. Gt. Southern was 13¾, compared with 13¼ a week ago, the 5 per cent. preference half-a-point better at 26½, and a similar improvement was shown in the 4 per cent. debentures at 60. San Paulo ordinary has been maintained at 49 and Antofagasta at 11½. United of Havana debentures were firmer at 25½. Canadian Pacifics at 15½ were unchanged on balance. The preference was 72½, and the debenture stock 101¾.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ending	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1941/2	No. of Weeks	Aggregate traffics to date: Totals 1942/3	Aggregate traffics to date: Totals 1941/2	Aggregate traffics to date: Increase or decrease	Shares or stock	Prices: Highest 1943	Prices: Lowest 1943	Prices: April 4, 1944	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chile) & Bolivia	834	25.3.44	26,940	+ 60	13	368,980	348,720	+ 20,260	Ord. Stk.	15¾	10	12	Nil
	Argentine North Eastern ...	753	25.3.44	15,186	+ 2,682	39	554,808	474,924	+ 79,884	...	7⅞	5	5	Nil
	Bolivar	174	Feb., 1944	5,258	+ 739	9	9,947	9,811	+ 136	6 p.c. Deb.	22½	18	17½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	23½	19	17	Nil
	Buenos Ayres & Pacific ...	2,807	25.3.44	130,800	+ 12,000	39	4,028,520	3,828,540	+ 199,980	Ord. Stk.	8½	5½	6½	Nil
	Buenos Ayres Great Southern	5,080	25.3.44	216,120	+ 36,000	39	6,980,940	6,283,980	+ 696,960	Ord. Stk.	17⅛	9½	13⅜	Nil
	Buenos Ayres Western ...	1,930	25.3.44	64,080	+ 9,300	39	2,155,860	2,096,820	+ 59,040	,,	16	9⅝	11½	Nil
	Central Argentine	3,700	25.3.44	171,750	+ 35,724	39	5,781,792	5,161,431	+ 620,361	,,	10¾	6¼	8½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4⅝	3	4	Nil
	Cent. Uruguay of M. Video	972	25.3.44	32,951	— 1,485	39	1,300,715	1,075,406	+ 225,309	Ord. Stk.	7⅝	4½	5½	Nil
	Costa Rica	262	Feb., 1944	22,805	+ 4,909	33	175,664	114,452	+ 61,212	Stk.	16	12½	15	Nil
	Dorada	70	Feb., 1944	21,672	+ 2,272	9	47,692	39,990	+ 7,702	1 Mt. Db.	96	92	93½	6⅓
	Entre Rios	808	25.3.44	20,274	+ 1,860	39	761,736	690,930	+ 70,806	Ord. Stk.	9	5½	6	Nil
	Great Western of Brazil ...	1,030	25.3.44	24,300	+ 8,300	13	291,600	212,500	+ 79,100	Ord. Sh.	59/9	24/4½	26/3	Nil
	International of. Cl. Amer.	794	Feb., 1944	$819,809	+ $163,288	8	$1,534,088	$1,312,320	+ 221,768	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	2¾	1⅛	⅜	Nil
	La Guaira & Caracas... ...	22½	Feb., 1944	7,615	— 1,030	9	14,255	18,080	— 3,825	5 p.c. Deb.	90	80	88½	Nil
	Leopoldina	1,918	25.3.44	44,293	+ 12,231	39	535,999	393,489	+ 142,510	Ord. Stk.	7¾	4	5	Nil
	Mexican	483	21.3.44	ps. 387,200	+ ps. 27,500	12	ps.4,538,600	ps. 3,751,100	+ ps. 787,500	Ord. Stk.	1⅛	⅜	½	Nil
	Midland Uruguay	319	Jan., 1944	16,510	+ 6	30	119,975	98,659	+ 21,316	—	—	—	—	—
	Nitrate	382	15.3.44	5,730	+ 1,424	10	44,100	27,604	+ 16,496	Ord. Sh.	83/9	71/3	68/9	Nil
	Paraguay Central	274	24.3.44	$56,397	+ $14,137	13	$1,949,092	$1,513,150	+ $435,942	Pr. Li. Stk.	75	51½	70	8
	Peruvian Corporation ...	1,059	Feb., 1944	98,853	+ 15,445	35	847,484	666,842	+ 180,642	Pref.	17⅛	10¾	10	Nil
	Salvador	100	Jan., 1944	c193,000	+ c 16,000	29	c 796,000	c 609,000	+ c 187,000	—	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	71	57	49	4½
	Taltal	160	Feb., 1944	4,560	+ 2,065	36	45,270	36,911	+ 8,359	Ord. Sh.	37/6	20/-	17/6	Nil
	United of Havana	1,301	25.3.44	86,185	+ 14,891	39	2,067,175	1,904,738	+ 162,437	Ord. Stk.,	8½	3½	3	Nil
	Uruguay Northern	73	Jan., 1944	1,372	— 323	30	10,088	9,605	+ 483	—	—	—	—	—
Canada	Canadian Pacific	17,034	21.3.44	1,189,000	+ 158,600	12	13,048,200	10,971,000	+ 2,077,200	Ord. Stk.	18	13⅜	15½	Nil
India†	Baral Light	202	Feb., 1944	25,575	+ 3,285	47	237,600	197,852	+ 39,998	—	—	—	—	—
	Bengal-Nagpur	3,267	Feb., 1944	974,475	+ 23,250	7	11,369,400	10,049,850	+ 1,319,550	Ord. Stk.	104½	101¼	105½	3
	Madras & Southern Mahratta	2,939	Feb., 1944	285,150	+ 42,472	44	9,380,910	7,961,306	+ 1,419,604	—	—	—	—	—
	South Indian	2,349	20.12.43	199,410	+ 24,449	37	5,321,558	4,562,445	+ 750,113	—	—	—	—	—
Various	Egyptian Delta	—	20.2.44	19,780	+ 5,522	48	543,990	418,153	+ 125,837	Prf. Sh.	6 1/16	2⅞	6	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	45	32	40	8½
	Midland of W. Australia ...	277	Jan., 1944	27,277	— 7,762	29	223,921	225,367	— 1,446	Inc. Deb.	101	93	100½	6
	Nigerian	1,900	30.12.43	68,456	+ 7,866	26	1,933,466	1,833,420	+ 160,046	—	—	—	—	—
	South Africa	13,291	5.2.44	906,790	+ 63,914	46	37,522,295	34,935,498	+ 2,586,797	—	—	—	—	—
	Victoria	4,774	Nov., 1943	1,335,935	— 64,116	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current price and are within a fraction of ⅛ Argentine traffics are given in sterling calculated @ 16⅛ pesos to the £
† Receipts are calculated @ 1s. 6d. to the rupee § ex dividend